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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

UNITED STATES OF AMERICA, Plaintiff, v. FUJIAN JINHUA INTEGRATED CIRCUIT CO., LTD, Defendant.	CASE NO. 18-CR-00465 MMC UNITED STATES' OPPOSITION TO DEFENDANT'S MOTION FOR JUDGMENT OF ACQUITTAL PURSUANT TO FEDERAL RULE OF CRIMINAL PROCEDURE 29 The Honorable Maxine M. Chesney Courtroom 7, 19th Floor

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INTRODUCTION

In its case-in-chief, the United States proved beyond a reasonable doubt that Defendant Fujian Jinhua Integrated Circuit Co., Ltd., ("Jinhua") is guilty of all three charges against it in the Indictment. At the close of the government's case, Jinhua moved for a judgment of acquittal pursuant to Federal Rules of Criminal Procedure 29 focusing on only a few limited issues. Thus, Jinhua did not contest that the alleged Micron Technology, Inc., ("Micron") trade secrets were in fact trade secrets. It did not contest the existence of a conspiracy to possess and use Micron's trade secrets. It did not contest that Jinhua is a foreign instrumentality of the Peoples Republic of China ("PRC") nor that the conspirators intended to benefit Jinhua and the PRC. Instead, Jinhua chiefly contended that none of the conspirators was Jinhua's agent at what Jinhua contends were the relevant times to establish criminal liability for Jinhua's knowing participation in the conspiracy to steal, possess, and use Micron's trade secrets.

The Court should deny the Rule 29 motion for three reasons. *First*, the evidence proved beyond a reasonable doubt that J.T. Ho and Stephen Chen were agents of Jinhua during the charged conspiracies, and thus, their knowledge, intent, and acts regarding Micron's stolen trade secrets are attributable to Jinhua. *Second,* Jinhua joined the conspiracy through Ho and Chen, and it is settled law that late joiners to a conspiracy adopt the prior acts in furtherance of the conspiracy. Jinhua is silent about the governing law of late-joining conspirators in its Rule 29 motion. *Third*, Jinhua's claim that extraterritoriality is an element of the offense is wrong. And even if exterritoriality were an element, Jinhua's failure to raise the issue without showing good cause for the late challenge fails under Federal Rule of Criminal Procedure 12.

PROCEDURAL BACKGROUND

On September 27, 2018, a grand jury sitting in the Northern District of California returned a true bill charging Jinhua with three criminal counts. Count One of the Indictment alleges that Jinhua and the other indicted coconspirators conspired to commit Economic Espionage beginning in or about January 2016, and continuing until the date of the Indictment, September 27, 2018. *See* Dkt. 1 (Indictment) ¶ 17. Count Two alleges that Jinhua and the other indicted coconspirators conspired to commit theft of trade secrets beginning in or about October 2015, and continuing again until the date of the Indictment, September 27, 2018. *See id.* ¶ 51. Count Seven alleges that Jinhua committed economic espionage from

in or about February 2016 to the date of the Indictment, September 27, 2018. *See id.* ¶ 63.

A bench trial commenced on February 28, 2022. The United States' case-in-chief included 20 witnesses over 20 court days and approximately 450 exhibits. The United States rested on April 4, 2022. Jinhua then moved for a judgment of acquittal pursuant Criminal Rule 29(a). *See* Dkt. 425 (Def.'s Rule 29 Mot.), and Dkt. 449 (Def.'s Corrected Rule 29 Mot.). The Court reserved decision on Jinhua's motion pursuant to Criminal Rule 29(b), and subsequently ordered the government to file a response on or before May 13, 2022. *See* Dkt. 461 (Criminal Minutes). This Opposition is thus timely filed.

SIGNIFICANT FACTS INTRODUCED IN EVIDENCE AT TRIAL

I. A Brief Description of DRAM Technology and Micron's Trade Secrets

Dynamic random-access memory ("DRAM") is a type of high-speed digital memory that is ubiquitous in modern electronics and found in everyday products like mobile phones, cars, and computers. *See* DeBoer Tr., Vol. 7, 1144:17-21. Each digital bit of information on a DRAM chip is stored on a "cell." A cell comprises one capacitor that stores a certain electrical charge corresponding to a digital 1 or a digital 0, and one transistor that serves as a switch to read or write the charge onto the capacitor. *See* DeBoer Tr., Vol. 7, 1146:19-24, 1193:3 – 1194:2. There are billions of cells on each DRAM chip, arranged as an "array," that allows each chip to store billions of bits of information. *See* DeBoer Tr., Vol. 7, 1183:21 – 1184:9, 1193:3 – 1194:2. Building DRAM chips with extremely small cells and densely packed arrays is the fundamental challenge of manufacturing DRAM at scale. *See, e.g.*, DeBoer Tr., Vol. 7, 1184:10-16, 1187:18 – 1188:11, 1197:2-13.

The alleged trade secrets in this case are Micron's manufacturing processes—or "process flows"—for making DRAM. Specifically, the alleged trade secrets are the sequence of steps (for simplicity, the "steps") for manufacturing Micron's DRAM, the key parameters (i.e., the "recipes") for each step, and the manufacturing equipment (i.e., the "tools") used to implement each step. For purposes of its Rule 29 Motion, Jinhua does not dispute that Micron's steps, recipes, and tools are trade secrets or that the co-conspirators believed them to be trade secrets. Documents that the United States labeled Trade Secrets 1-8 describe those trade secrets. Trade Secret 1 encompasses the combination of process-flow information in over 20 Micron documents, including Trade Secrets 2-8. *See generally* DeBoer Tr., Vol. 7-8; Dkt. 1 ¶ 12 (Indictment); Dkt. 203 ¶ 4 (Bill of Particulars).

Developing the steps and recipes, and selecting the tools, to manufacture DRAM is complex and expensive. *See, e.g.,* DeBoer Tr., Vol. 7, 1188:7-11. There are roughly 500 or more steps that physically alter a silicon wafer to build up the DRAM structures and impart precise electrical characteristics. *See, e.g.*, P0177.0018-19; DeBoer Tr., Vol. 7, 1141:21 – 1143:10. There are hundreds of other steps that measure and inspect the silicon wafers. *See, e.g.*, DeBoer Tr., Vol. 7, 1194:18 – 1195:14. Development of a process flow requires engineers, scientists, and technicians—many with advanced degrees—from a wide variety of technical disciplines. *See* DeBoer Tr., Vol. 8, 1274:21 – 1275:3, 1286:14 – 1288:6.

For each new technology generation (also called a "node"), Micron spends large sums on research and development to modify a relatively small percentage of a prior generation's process technology to achieve denser cell arrays that enables Micron to fit more chips on each Silicon wafer. *See* DeBoer Tr., Vol. 7, 1212:21 – 1213:15. Manufacturers typically refer to a node by the minimum physical feature size—measured in nanometers ("nm")—that the process technology can build on a chip. *See* DeBoer Tr., Vol. 7, 1143:17-23. To develop its 25nm process technology, Micron spent roughly $300 to $500 million to modify roughly 20 percent of it prior generation's process. *See* DeBoer Tr., Vol. 7, 1202:1-9, 1212:21 – 1213:15. For its subsequent 20nm and 1x nm generations, Micron spent about $1 billion per generation to change the same 20 percent. *See* DeBoer Tr., Vol. 7, 1202:1-9; *see also* Daly Tr., Vol 19, 4006:2-4007:23 ("$1 billion per node in 2016-2018 for logic or memory based on four independent sources).

Despite the large expenditures, DRAM has historically been a commodity product. *See* DeBoer Tr., Vol. 7, 1210:15 – 21, Durcan Tr., Vol. 19, 3605:17 – 3606:4. A Micron DRAM chip works the same as another manufacturer's. *See* DeBoer Tr., Vol. 7, 1210:22 – 1211:1. DRAM manufacturers, therefore, compete primarily on price. And the price of commodity DRAM is subject to significant fluctuations based on supply and demand. *See, e.g.*, Durcan Tr., Vol. 19, 3602:2 – 3604:2. Those market pressures make DRAM a brutal industry in which to compete. *See* DeBoer Tr., Vol. 7, 1211:2-9; Durcan Tr., Vol. 19, 3580:16 – 3581:8, 3604:3 – 3605:9. A market entrant like Jinhua that can avoid the substantial research and development costs by copying another company's process technology could undercut legitimate competitors on price, potentially driving them out of business. *See* DeBoer Tr., Vol. 8, 1425:22-24; Dyer Tr., Vol. 14, 2580:13-19; Durcan Tr., Vol. 19, 3604:5-16.

II. The Conspiracy to Mass Produce DRAM in the PRC by Stealing, Possessing, and Using Micron's Trade-Secret Process Technology

A. UMC's Early Planning for Developing DRAM

At least as early as September 2015, United Microelectronics Corporation ("UMC") executives were planning a new business to manufacture DRAM in mainland China. UMC had never been a major competitor in DRAM, and completely exited the industry long before 2015. *See* Yu Tr., Vol. 4, 699:18 – 700:14; Trafas Tr., Vol. 17, 3116:10-16. According to an early business plan then-UMC-employee Bowen Huang sent to UMC's Chairman Stan Hung on September 16, 2015, with a copy to Chen, UMC sought to create "Two memory chip manufacturing facilities … to achieve the domestic [i.e., PRC-based] manufacturing of 25/20/1X/1Ynm memory chips." P0707T.0004 (emphasis in original). UMC's planned to "Combine resources from both sides" of the Taiwan Strait to "catch up with the manufacturing processes of the three major [DRAM] manufacturers": Micron, Samsung, and Hynix. *Id.* at 0004, 0022. The plan called for UMC to develop the manufacturing process technology for 25nm and 20nm DRAM, and then transfer the processes to a new chip-manufacturing entity in China. P0707T.0005, 0010. The nascent Chinese entity would be incorporated in the Fourth Quarter of 2015. *See id.* at 0013. Jinhua became that entity.

From the outset, UMC planned to leverage Micron's technology and former Micron (including Rexchip and Elpida) executives and employees to achieve its goal. Chen—who left Micron on July 31, 2015, and started at UMC on September 16, 2015—would provide the requisite experience in the manufacturing process technology. *See* P0707T.0038; P1278.0001 (regarding Chen's departure from Micron). The business plan highlighted Chen's purported experience as the "Chairman of Micron (Taiwan)" from 2013-2015 and as the "President of Rexchip Electronics," which Micron acquired in 2013. *Id.*; Schow Tr., Vol. 1, 193:7 – 195:9 (discussing acquisitions); Durcan Tr., Vol. 19, 3581:12 – 3582:5 (discussing acquisitions). UMC planned to build "a Comprehensive R&D Team" in China by recruiting "Chinese engineers at Micron" to serve as "process and testing specialists." P0707T.0018; *see also* P709T.0013 (October 10, 2015 version of business plan stating "[t]he majority of the Taiwan/Japan team comes from the company Elpida, which is also currently the object of competition among all parties."). For the design of the proposed DRAM chips, UMC planned to use the experience of Takao

Adachi of Ultra Memory Incorporated. *See* P0707T.0039. UMC's business plan highlighted Adachi's experience as the prior "Executive Director and [Chief Technology Officer]" of Elpida—a Japanese company Micron also acquired in 2013. *Id.*; Schow Tr., Vol. 1 193:7 – 195:9; Durcan Tr., Vol. 19, 3581:12 – 3582:5.

Immediately following those slides, the business plan had a section titled "Challenges of Manufacturing 25/20 NM Scale Chip" comprising Micron's technology roadmap and information about the capabilities of Micron's manufacturing process.[1] P0707T.0040-44. The slide "25nm beyond DRAM Technology [Roadmap]," for example, uniquely summarized Micron's DRAM design technology and process technology going back to 2014. *Id.* at 42; DeBoer Tr., Vol. 8, 1369:3 – 1370:9 (discussing identical version of roadmap in P1046T). The slides also reference a change from a 2x3 cell structure to a 3x2 structure that was unique to Micron's technology. *See* P0707T.0042, 44; Dyer Tr., Vol. 15, 2709:2-12, Vol. 16, 3059:3-12.

An October 12, 2015 version of the business plan Huang sent to Stan Hung and Chen set out three possible ways to acquire DRAM process technology: (1) purchasing a minimum 20 percent equity stake in a company like Micron for $4 billion; (2) procuring technology through a license agreement with Micron or SK Hynix for at least $300 million per technology generation, in addition to royalty payments; or (3) "Team Building" for $300 million per technology node, with resources from Taiwan and Japan—the locations of Micron's Fab 16 and Fab 15, respectively. P0709T.0008; *see also* Dyer Tr., Vol. 18, 3385:5 – 3388:5. The plan did not explain how developing DRAM by "Team Building" for less than the cost of licensing existing technology could refer to a legitimate development.

B. The Conspirators Possessed and Used Micron's Trade Secrets and Attempted to Conceal Their Activities

J.T. Ho and Neil Lee were process engineers at Micron who, like Chen, worked at Rexchip, a joint Japanese and Taiwanese semiconductor manufacturing company owned in majority part by Elpida, before Micron acquired it in 2013. *See* P0456.0001, 12-13, 15 (Micron Fab 16 org. chart); Chen Tr.,

[1] Chen had previously requested and received the Micron information from Yoshinori Tanaka, who sent the slides to him September 14, 2015. *See* P1046T.0001-0005. Chen forward the slides to UMC employee Bowen Huang, who the incorporated them into the UMC business plan. *See id.*

Vol. 1, 83:8 – 84:8, 95:10-17; Schow Tr., Vol. 1, 197:1-13. Ho was a process-integration engineer who specialized in transferring already developed technology from one fab to another. *See* P0456.0015, Dyer Tr., Vol. 14, 2608:10 – 2609:21; P0902.0003. Lee was a process engineer who worked on process steps that etch silicon wafers during production. *See* P0456.0012-13. Both worked at UMC and reported to Chen by November 2015. *See* P0889T.0001.

Ho and Lee began work on the DRAM project as soon as they started at UMC. Initially, Ho and Lee were the only engineers working for Chen on the project. *See* P0889T.0001. Chen authorized issuance of UMC laptops for Ho and Lee. *See* P1075T.0006, 0009, 0011. Chen approved laptop USB access for Ho on November 12, 2015. *See* P1190T. The next day, Ho began using his UMC-issued laptop, Device 28, to access the alleged trade secrets—including on his USB devices. *See* P0382 (timeline for Device 28); Crain Tr., Vol. 9, 1545:3-15 (attributing Device 28 to Ho), 1559:22 – 1560:3 (example of USB device plugged in to Device 28 to access an Elpida process flow document). Chen approved USB access for Lee on November 27, 2015. *See* P1191T. Lee began accessing Micron files using his USB port the same day. *See* P1168T, "sheet 1" tab (UMC log file).

Sometime after Chen started at UMC and possibly in December 2015, UMC Manager of Information Security CS Chang and IT Department Engineer for VIP Support JC Cho met with Chen in Chen's Office at UMC. *See* Chang Tr., Vol. 3, 588:25 to 589:5; Cho Tr., Vol. 2, 477:7-23. Both Chang and Cho testified that Chen had questions about information security at UMC. *See* Chang Tr., Vol. 3, 589:6-9; Cho Tr., Vol. 2, 477:7-9. Chang told Chen that employees are not allowed to bring electronic devices to use in the company. *See* Chang Tr., Vol. 3, 89:24-25. Chang further explained to Chen that "the peripheral ports on company computers are closed and that you can apply for authorization if you need to use them. There is a record made if the USB is used." *Id.* at Vol. 3, 590:9-12. Chen then asked Chang "if there are two computers in front of you and you look at computer A, you see the information on Computer A, and then you enter that information into Computer B, whether a record will be made of that." *Id.* at Vol. 3, 590:18-21. Chang told Chen that "there would be no record." *Id.* at Vol. 3, 590:23. Chang believed this second question to be "somewhat strange" because "no one in the past had asked that question." *Id.* at Vol. 3, 591:21-22.

On December 4, 2015, UMC's IT Department received an "unusual" request to replace and thus

reformat—or wipe clean—Ho's and Lee's laptop hard drives. *See* Chang Tr., Vol. 3, 567:16 – 568:15; P1151 (hard drive replacement request prepared at 10:28 am); P1147T (hard drive replacement request prepared at 10:33 am); P1168T (USB log files for Lee and Ho, with last entries dated December 3 and December 4, 2015, respectively). Given the suspiciousness of the request, UMC's IT Department pulled Ho's and Lee's USB log files. *See* Chang Tr., Vol. 3, 567:16 – 569:1. Chang reviewed the USB log, and based on its contents, reported it to his supervisor, H.H. Chou. *See* 1168T; Chang Tr., Vol. 3, 586:24.

The log file itself is an Excel spreadsheet that contains a recording of the use of USB ports on two computers: one tab for Lee and a second tab for Ho. *See* P1168T. The log files showed that Ho and Lee had accessed or transferred a large number of files using USB devices plugged into their UMC computers. *See id.* The log file recorded a staggering 25,882 logged operations by Ho between November 13, 2015 and December 4, 2015. *See id.* On Ho's log file, the name Elpida appears at least 1,171 times, the name Rexchip appears at least 260 times, and the name Micron appears at least 52 times. *See id.* Ho's folders were named, to highlight only a few examples, "Micron flow data" and "F32 25mn" and "F28 20nm." *Id.* File names included names such as "Rexchip 25nm Flow summary 0710 TF.xls" and "Copy_25nm E300 Process Status_130924_1.ppt." *Id.* As the Court heard, E300 was the Elpida fab. *See* DeBoer Tr., Vol. 8, 1300:3-7. And, significantly, Ho's log file showed Ho copying Trade Secrets 6, 7, and 8, all on December 1, 2015. *See* P1168T.

The log file also recorded 191 operations by Lee between November 27, 2015, and December 4, 2015. *See* P1168T. Lee's folder structure within the log files showed that he had a folder entitled "Secret Project," and subfolders named "25nm flow and recipe" and "Recipe table" and "Tool review." *Id.* File names recorded within Lee's "Secret Project" folder included names such as: "~$100s and 110s DRAM_Fab16 Tool List Plan20150623.xlsx" and "110sD investment list summary 20150707.pptx" and "Rexchip 25nm Flow summary 0614 Diff.xls." *Id.* Dr. DeBoer's testimony connects these file names to Micron. For example, Dr. DeBoer testified about terminology such as 100 as referring to Micron's 20 nanometer technology, and the 110 series referring to Micron's 1x series. *See* DeBoer Tr., Vol. 7, 1201:14-20.

The same day—December 4, 2015—UMC began processing requests for two new "communal use" laptops for a "VIP User." P1146T.0001. UMC issued laptops with property numbers UMC030761

and UMC031525. *See id.* Laptop UMC031525 was never obtained by law enforcement. Ho and Lee used the other laptop— UMC030761, Device 12—to access Micron's trade secrets at least 62 times between December 8, 2015, and February 3, 2017 (four days before the Taiwanese searches at UMC). Ho used that laptop to access Micron's trade secrets at least 17 times after he became Jinhua's Director of Technological Research and Development on July 1, 2016. *See* P0378 (forensic timeline of Device 12); P0272.0001-2 (Ho's labor contract with Jinhua); Crain Tr., Vol. 9, 1590:8-11, 1600:8 – 1601:4 (47 of 63 openings of files containing trade secrets attributed to Ho, 12 of 63 to Lee), 1608:7 – 1610:4 (17 openings by Ho after July 1, 2016). Ho used the laptop, Device 12, to open Micron files stored on his Kingston flash drive, Device 14. *See* Crain Tr., Vol. 9, 1559:22 – 1560:3.

Chen's team adopted the term "benchmark" to refer to Micron. On November 17, 2015, Ho sent Chen a table containing technical information about back-end-of-line ("BEOL") manufacturing for UMC logic, Samsung 22 nm DRAM, Hynix 25 nm DRAM, and Elpida 25 nm DRAM. P0718.0001-0002; Dyer Tr., Vol. 17, 3173:23 – 3175:3. Ho followed up the same day, on the same email thread, that he had "update [sic] benchmark company 20nm data." P0719.0001. The only change Ho made to the table was to change the word "Elpida" to "Benchmark" and add additional Elpida information. *Id.* at 0002; Dyer Tr., Vol. 17, 3178:6-25.

On the same day, Ho sent Chen a 53-step DRAM BEOL process flow, complete with a descriptive step names and tool model for each step. *See* P0720. The descriptive step names, sequence of steps, tools, and formatting were a near exact match to information in a Micron spreadsheet located on Ho's Kingston flash drive, Device 14. *See* Dyer Tr., Vol. 17, 3226:25 – 3230:19, 3233:18 – 3236:15; P0479 (Micron version of BEOL flow). The United States' DRAM expert Dr. Thomas Dyer testified that a single engineer could not create such a detailed process flow from scratch just a couple of weeks after starting at a new company. *See* Dyer Tr., Vol. 17, 3237:2 – 3238:3. Chen responded to Ho's email the same day indicating he understood the data came from the "benchmark" company: "Great, let's find time tomorrow morning to have a review on flow concept approaching with benchmark." P0721.0001.

On November 24, 2015, Ho sent Chen and Lee information about the history of a particular Micron process step. The email subject was "DRAM M1 AL condition (benchmark X company)." P0731T.0001. Ho stated, "I list DRAM M1 AL Sputter condition from old to new . . . for your

reference." *Id.* The attached table described detailed process recipe information and its history for a particular step in Micron's process flow. *Id.* at 2; Dyer Tr., Vol. 17, 3242:18-24, 3244:4 – 3247:12. The table referenced operation codes that are unique to Rexchip/Micron. Dyer Tr., Vol. 17, 3243:4-12. It also referenced "F15"—shorthand for Micron's Fab 15 in Japan. *Id*. at Vol. 17, 3243:13-18. Based on Micron's process history, Ho told Chen that "swapping the 1Xnm [Metal 3] to [room temperature] should be correct." P0731T.0001.

In December 2015, Ho emailed Chen calculations showing that Micron's 1x nm process could manufacture a Micron 20nm DRAM chip modified from a 2x3 to a 3x2 cell structure. Using Micron's parameters, Ho attempted to calculate the active-area half pitch of a Micron cell modified to a 3x2 cell array. *See* P0734T.0001-2; Dyer Tr., Vol. 17: 3213:5-25, 3222:9-12. As shown on Ho's spreadsheet, Ho calculated that, if UMC changed to a 3x2 structure, the active-area half pitch in Micron's 1x nm process was capable of building active areas spaced as far apart as UMC needed to build a Micron 2x3 cell array altered to a 3x2 array. *See* Dyer Tr., Vol. 17, 3223:1-9, 3224:3-8. Ho communicated that finding to Chen and Lee: "AA HP will be 22.47nm, roughly 3.4nm larger than benchmark compony [sic] 1Xnm." P0734T.0001 ("AA HP" in context meaning active-area half pitch). Chen responded the same day: "Let's review the concept again next week and continue Possibility study. [W]e also need to come out road map for Development." P0736T.

C. An Expanded Project M Team Met in December 2015 to Create a DRAM Process Flow by Copying Micron's Process Flow Step by Step

Soon after the arrival of Ho and Lee at UMC, Chen worked to expand his DRAM team. On November 20, 2015, Chen notified Ho and Lee that he was "thinking to build a core team from UMC" consisting of "~ 10 members to work with you guys." P0889T. The same day, Chen emailed UMC CEO PW Yen that he planned "to propose core team from Modules/Integration of UMC" consisting of "10 ~ 15 members at beginning stage." P0730.0001. Chen described the work that his team would do in terms that indicate a reference to a pre-existing (or benchmark) process. Chen said the team would study "[c]ommon tools and process approach," and analyze the process "for unique tools." *Id*. It would also perform a "[g]ap analysis for Project [i.e., DRAM] vs logic line." *Id.* Yen followed up and suggested that "we give [the project] the name of Project M (meaning Memory and Mainland China)." *Id.*

By the beginning of December 2015, UMC employee SF Tzou was organizing a series of meetings that began on Monday, December 7, 2015, with the larger team of engineers. On Sunday, December 6, 2015, Tzou emailed Ho, Lee, and various UMC engineers to invite them to the meetings (collectively the "Project M Engineers"). Tzou's email copied Chen. Tzou stated:

> There will be an activity for "Project M". We need to create a full process flow steps for "Project M". We will be in one meeting room at P5/P6 to learn the process in details and then compile this process flow steps to fit UMC's tool process from 9:00am to 4:30 pm… This task may take 1 or 2 weeks (depends on our progress). Please keep this task as "strictly" confidential and do not disclose to other non-related people.

P0742T.0004. Tzou thereby described for everyone on the email how Project M would create its DRAM process: by "learning" an existing process and then "fit[ting]" it to "UMC's tool process." *Id.* Chen responded to Tzou's email, copying the entire Project M team, stating that he would not be able to join the team on Monday, December 7, but that he would join on Tuesday, December 8. *See* P0741T.0001.

Consistent with the approach of fitting Micron's process to UMC's tools, Tzou had emailed Ho on December 3, 2015—with a copy to Lee and Chen—a UMC logic process flow. That flow contained "the typical 'Naming' of process flow steps" at UMC. P738.0002. Tzou stated "we can use the similar wording (or directly copy naming for saving the time) to create new process flow." *Id.* at 2-3. The "Naming" document allowed the Project M Engineers to rename Micron's process steps using UMC's conventions. *See* Dyer Tr., Vol. 15, 2741:2-15; 2749:6-18. Tzou further suggested that Ho should save the UMC naming document to "your USB to make it easy for the together work" the following week. P0738.0002. USB port access on Ho's UMC laptop had been approved by Chen on November 12, 2015. *See* P1190T. Tzou also emailed Chen, explaining that "[b]ecause J.T. told me that his computer is going to format, I suggest you might save this file to USB if your computer is available." P0738.0001.

The newly expanded Project M team began meeting on December 7, 2015, and continued for about two weeks. Lee created an Excel document called "Meeting minute 20151207 3.xls" that documented, in detail, the activities of the team through December 16, 2015. *See* P0482T (the "December Meeting Minutes"). The first tab of the December Meeting Minutes is titled "1207" and says it is the "Project M meeting minutes (12/7)." P0482T at 1207 tab, row 1. The team met from "0930~1450." *Id.* at row 2. The "[t]eam member[s]" listed as present were Ho, Lee, Tzou, and the rest of the Project M Engineers. *Id.*

The December Meeting Minutes contained a complete copy of two Micron process flows—including the steps in sequence, recipes, and tools—in spreadsheet form. *See* P0482T, "25nm 4G3D Flow" tab; Dyer Tr., Vol. 15, 2681:12-19, 2686:10 – 2693:4. One of the flows was dated June 14, 2013, and is a complete copy of the steps, recipes, and tools in the "25nm 4G3D Flow" tab in Trade Secret 1 documents 11 through 16. *See* Dyer Tr., Vol. 15, 2686:10 – 2688:2; P0048 (TS1(11)), P0063 (TS1(12)), P0074 (TS1(13)), P0085 (TS1(14)), P0089 (TS1(15)), P0109 (TS1(16)).[2] The Project M Engineers also inserted an August 8, 2015 version of Micron's 25 nanometer flow into the spreadsheet. *See* P0482T, "25nm 4G3D Flow" tab, Columns D-F. That process flow matches that in Trade Secret 1, document 17. *See* Dyer Tr., Vol. 15, 2690:4 – 2692:14; P117, "V90B" tab, columns H-J. The spreadsheet had additional columns that the Project M Engineers added so they could record—Micron step by Micron step—which steps, recipes, or tools were new to UMC (i.e., higher risk), and which UMC already did as part its logic-chip manufacturing (i.e., lower risk). *See* P0482T at 25nm 4G3D Flow tab, columns K-N; Dyer Tr., Vol. 15, 2693:9-21, 2695:5 – 2697:17.

The Project M Engineers also added columns to record—for each Micron step—the step description and tool using UMC's naming conventions, as circulated by Tzou to Ho and Chen on December 3, 2015. *See* P0482T at 25nm 4G3D Flow tab, columns G-J; Dyer Tr., Vol. 15, 2700:17 – 2702:8, 2741:2 – 2753:4. As of December 16, 2015, the Project M Engineers completed the risk assessments on Micron steps through row 219 of the spreadsheet, and UMC renaming of the Microns steps through row 178. *See* P0482T at 25nm 4G3D Flow tab, columns G-H (UMC naming), columns K-O (risk assessments).

The first item the Project M Engineers discussed was "Current Competitor Product and tech. status update," followed by "each generation half pitch, Difference of 2X3 and 3X2." P0482T at 1207 tab, rows 8, 10 (corrected for clarity). Based on the Micron process flow embedded in another tab of the spreadsheet, the "Current Competitor Product" was Micron's. *See id.* 25nm 4G3D Flow tab; Dyer Tr., Vol. 15, 2707:9-19. The follow-up items listed include a discussion of detailed process issues that one would encounter when dealing with an existing process, not a from-scratch development. Ho, for

[2] Trade Secret 1, documents 11-16 are the same Excel spreadsheets that have their information filtered differently. The spreadsheets can be unfiltered to display the same information.

example, was slated to "Introduce solution of 25nm [shallow-trench isolation] gap fill and dislocation issue." *Id.* row 19. Project M could not have had a dislocation issue on a process flow that it had not developed yet. *See* Dyer Tr., Vol. 15, 2714:3-13. Likewise, Lee was to follow up with a "G5 decay history update." *Id.* row 22. A from-scratch DRAM development would not have had a "history" to update. Dyer Tr., Vol. 15, 2712:21-23.

After December 7, the notes for each day are titled "Flow *review* step by step." *See, e.g.,* P0482T, "Follow item" tab, row 53 (emphasis added). Many of the entries show the team questioning why Micron performed certain steps, or utilized certain recipes to implement those steps. And those discussions typically reference the Micron/Rexchip-specific process codes that Micron uniquely used to identify its process steps. *See* Dyer Tr., Vol. 15, 2717:12 – 2723:18. For example, on Tuesday, December 8—the day Chen indicated he would join the meeting, P0741T—the team asked "[w]hy 1F [Argon] annel (1F.FFE10) … temperature 150 degrees." P0482T "Follow item" tab, row 22. "1F.FFE10" was an internal Micron/Rexchip code for a specific anneal process step with a recipe requiring a 150 degree temperature. *Id.* 25nm 4G3D Flow tab, row 34, columns A-F, R-S. The Project M Engineers coded that step as a high risk level of 3 because it was "New Recipe condition for UMC." *Id.* 25nm 4G3D Flow tab, row 34, columns K-M. Similar examples exist on the "Follow item" tab. *See, e.g.*, P0482T, "Follow item" tab, row 33 ("1F.FFC10 why use [Hydrogen], UMC does not have this kind of tool."); *id.* "Follow item" tab, row 46 ("DO.FR[I]20 . . . why does it have to be 900 degrees? UMC always uses high temperature (1000 degrees)."); *id.* "Follow item" tab, row 50 ("RG.WWW20 uses single wafer trouble lesson-learn.").

The Project M Engineers continued their step-by-step review, copying, and alteration of Micron's 25nm process flow through most of December. *See* P0481 (Micron process flow document found on Ho's flash drive, Device 14,with UMC step-naming filled out through row 398 and last modified on December 21, 2015); Dyer Tr., Vol. 15, 2772:2:14.

As the Project M Engineers translated Micron's process flow into UMC's language, they extracted the UMC version and saved only that "clean" version onto UMC's computer network and email system. Ho's flash drive, Device 14, contained a series of files with names starting "UMC step naming_sf" followed by a December date, such as "1209." P1530.0003 (screenshot of "flow discussion

meeting minutes" folder from Ho's flash drive, Device 14, containing series of "UMC step naming_sf" files); *see, e.g.*, P0484 ("UMC step naming_sf-1209"); P0494 ("UMC step naming_sf-1218"). Those files contained progressively longer versions of the Micron 25nm process flow as translated into UMC's language. *See*, *e.g.*, P0484 (December 9 file filled out through spreadsheet row 103); P0494 (December 18 filed filled out through spreadsheet row 329). Tzou would then forward the cleaned file to the process-areas specialists on the Project M Team. *See, e.g.*, P1526 (December 8 circulation of Project M flow through Excel row 39); P1527 (December 9 circulation through excel row 103); P1528 (December 10 circulation through Excel row 109). *See also* Dyer Tr., Vol. 15:2772:15 – 2810:11.

D. Project M Prepared and Refined the Process Flow for Transfer to Jinhua for Mass Production

Project M evolved the process flow that it initially copied from Micron in December 2015. As explained by Dr. DeBoer and Dr. Dyer, one cannot just copy and paste a DRAM process flow from one facility into another. The fabrication process is so sensitive to environmental conditions, for example, that transferring a process flow from one fab to another requires a substantial engineering effort. *See* DeBoer Tr., Vol. 7, 1202:23 – 1204:22; Dyer Tr., Vol. 15, 2823:7-16. And Project M had other reasons to modify the process flow after the initial copying. *First*, consistent with advice Chen received from Yoshinori Tanaka in September 2015, Project M decided in February 2016 to pursue a 3x2 cell array at the 25nm node, instead of waiting until the 1x nm node, as Micron had. *See* Dyer Tr., Vol. 15, 2823:14-22. *Second*, Project M sought to maximize the use of tools and recipes it was already familiar with as part of UMC's logic fab. *See, e.g.*, Dyer Tr., Vol. 15, 2695:14 – 2696:14, 2706:13-23, 2727:2-11; P570T.0009; P823T.0009.

From 2016 through 2018, Project M altered the process it initially copied from Micron in ways that benefited Chen's multi-generation strategy. *See* P0570T.0005-6, 9. (multi-generation strategy); P0823T.0003 (Chen proposing "2 generations' development in 4 years"). Even where Project-M deviated from the Micron 25nm process flow—for example, to implement a 3x2 cell array—Project M incorporated process technology from Micron's 1x nm process flow. *See* Dyer Tr., Vol. 16, 2988:8 – 2990:14. Ho's devices show that he accessed trade secrets associated with Micron's 1x nm process from as early as November 27, 2015, to as late as January 20, 2017. *See* P0378 (Trade Secret 7). Dr. Dyer

determined that, at the time of the initial copying in December 2015, 100 percent of the then-existing Project M process sequence matched Micron's, because Project M developed that flow directly alongside Micron's. *See* Dyer Demonstrative A. By February 19, 2016, Project M decided to pursue the 3x2 cell array, and had altered the process sequence accordingly. At that point, about 70 percent of the Project M process sequence matched Micron's 25nm sequence (2x3), 12 percent matched Micron's 1x nm sequence (3x2), and 17 percent came from an undetermined source. *See* Dyer Tr., Vol. 16, 2989:9 – 2990:7. Those percentages stayed roughly consistent through the remainder of the DRAM development, including for the process flows delivered to Jinhua in March 2017, *see* P1192, and the final technology transfer package delivered to Jinhua in September 2018. *See* Dyer Tr., Vol. 16, 2954:9:-13 (March 2017 process deliverable), 2970:13-25 (comparison of 2017 process delivered to Jinhua), 2990:8-14 (comparison of 2018 process delivered to Jinhua); *see also* 1158T – 1161T (records documenting Jinhua's receipt of the 2018 technology transfer package).

Other evidence, including forensic evidence, corroborates that Project M continued to rely on Micron's trade secrets throughout the development. Ho continued to possess and access Micron's trade secrets at least until law enforcement seized the multiple devices he stored them on in February 2017. *See* P0377 (Ho's personal portable hard drive, Device 11); P0378 (UMC computer used by Ho, Device 12); P0380 (Ho's flash drive, Device 14). And the forensic evidence proved there was at least one unrecovered device from which Ho continued to possess—and could have continued to access—Micron's trade secrets after the seizures. *See* Crain Tr., Vol. 10, 1698:19 – 1700:9.

Ho also communicated with Kenny Wang about technical topics, including Micron's trade secrets, while Wang still worked at Micron. *See* P0270, Excerpts 9-10; P1320T (email follow up in response to technical question in LINE chats); P0834T.0003 (request to Ho to "suggest wafer type" on same day as Ho requested that information from Wang in LINE messaging application); DeBoer Tr., Vol. 8, 1248:2-1249:3 (Micron's wafer type information is a trade secret). Chen and Ho then recruited and hired Wang to join Project M. *See* P0270, Excerpts 1-8; DeBoer Tr., Vol. 8, 1248:11 – 1249:3 (wafer information is a trade secret). Ho coached Wang through his departure from Micron, including how to conceal that he was going to UMC and that Ho had recruited him. *See* P0270 Excerpts 3

(suggesting concealment), 5 (Ho admitting to Wang that when he left Micron: "I didn't tell them the truth. / But I'm a terrible actor, so it was better for me to keep quiet.")

On his last day at Micron in April 2016, Wang uploaded trade secrets and other confidential information to his Google Drive cloud account. *See* P0383. Further, Wang researched and used a software program called CCleaner to erase his Micron computer and thus cover his digital tracks. *See* P0409T. Wang was not completely successful. *See id.*; Tietsort Tr., Vol. 2, 324:7-10. Thus, in early May 2016, Wang came to UMC with a substantial amount of Micron's information, including trade secrets, which he then proceeded to use. *See* P0374 (trade-secret timeline for Wang's UMC laptop, Device 3); P0375 (Wang's personal portable drive, Device 8); P0376 (Wang's personal laptop, Device 9); P0379 (Wang's flash drive, Device 13). Additionally, Wang copied a number of Micron's design rules into Project M's design rules. *See* Dyer Tr., Vol. 18, 3362:17 – 3366:2. There is no dispute that "design rules are specific to a DRAM process and there [are] some rules that are specific to . . . a DRAM node." DeBoer Tr., Vol. 8, 1344:17-20.

Project M also copied from Micron a substantial amount of information about transistors on the DRAM chips. For example, Project M copied the names and parameters of certain transistors, specified to two or three decimal places. *See* Dyer Tr., Vol. 18, 3320:6 – 3338:15. As found in the 2018 Technology Transfer Package to Jinhua, Project M copied truth tables that specify the sequence with which ions are applied through particular masks to form the devices, as those truth tables were specified in Trade Secret 3. *See* Dyer Tr., Vol. 18, 3339:14 – 3345:15; *compare* P0131, "P.3 07 II table" tab (Micron mask truth table) *with* P1505 ("Mask truth table" tab from 2018 technology transfer package to Jinhua). And Project M copied the ion-implant parameters that are used to form the transistors on the silicon wafers. *See* Dyer Tr., Vol. 18, 3345:16 – 3354:10; *compare* P0142 (Trade Secret 4) "IMP table-V90B" tab *with* P0448.0005 (Project M "Device Weekly Report" with "TV0 Device implant condition proposal" by Wang).

Dr. Dyer also identified highly specific, multi-parameter recipes for individual steps that remained unaltered from the time of the initial copying until the September 2018 transfer of technology to Jinhua. *See* Dyer Demonstrative F. Some of the copied parameters maintained the exact same formatting as in Micron documents. *See* Dyer Tr., Vol. 16, 3005:16 – 3008:2; c*ompare, e.g.*, P482T

25nm 4G3D Flow tab, row 263, column R (Micron Recipe) P1206.0010 (matching Jinhua recipe).

Finally, Chen himself circulated or received confidential Micron information. A presentation for the China Development Bank that Huang sent to Chen in December 2016, for example, included a slide with information copied from a Micron document. *See* P1418T.0001, 0005. The pasted imaged included a large "Micron Confidential" watermark. *See id.* at 5; *see also* DeBoer Tr., Vol. 8, 1386:25 – 1387:17 (testimony on contents of slide). And in August 2018, Chen emailed a Micron "Mass Market Roadmap" to a Jinhua employee. P1422.0001; DeBoer Tr., Vol. 8, 1383:14 – 1385:8.

III. The Conspirators Possessed and Used Micron's Trade Secrets to Benefit Jinhua and Within the Scope of their Agency with Jinhua

A. UMC and Jinhua's PRC-Owned Shareholders Created Jinhua with the Intent that UMC Manage and Operate Jinhua Until it was a Self-Sufficient DRAM Manufacturer

On February 19, 2016, Fujian Provincial Electronic Information Industry Business Startup Partnership (together with Fujian Electronics & Information Group Co., Ltd, "FEIG"), Jinjiang Energy Investment Group Company Limited ("Jinjiang Energy"), and UMC (collectively, "the parties") entered into a Project Cooperation Framework Agreement ("PCFA") to create, own, and operate what would become Jinhua. *See* P1023T (PCFA); P1516 (PCFA signature page). The parties "plan[ned] to cooperatively develop the construction, operations, and research and development principals for a semiconductor chip project in Jinjiang." P1023T.0002. At the outset, FEIG agreed to contribute 55.55 percent of the equity in a "project company" (what would become Jinhua), Jinjiang Energy agreed to contribute 41.67 percent, and UMC agreed to have a "strategic investor" contribute 2.78 percent of the funds, equivalent to $50 million. *See* P1023 ¶ 3.2. The parties contractually agreed to increase UMC's shares gradually over time, with FEIG owning 40 percent of shares, Jinjiang Energy holding 30 percent, and "[UMC] and the strategic investor recommended thereby" owning 30 percent. *Id*. ¶ 3.3. The parties agreed to "share profits in proportion to" shareholding percentage. *Id.* The agreement defined "project company" as "the Sino-foreign joint venture set up by the parties in accordance with [the PCFA] and the bylaws of the project company." *Id.* at 15.

The PCFA set forth Jinhua's management structure. FEIG would "appoint three directors," Jinjiang Energy would "appoint two directors," and UMC would "recommend two independent

directors." P1023 ¶ 5.1 The parties "agree[d] that a leading figure in the industry recommended by [UMC] may serve as the general manager of the project company at an appropriate time subsequent to execution" of the PCFA. *Id.* ¶ 5.3. The contract required UMC to "[r]ecommend a core management team led by leaders of the industry, who will be responsible for work at the project company, such as future technological research and development, manufacture, chip design, sale and market development, etc." *Id.* ¶ 4.2(d). The parties agreed to "form a core technical team and a management and operations team led by leaders in the industry with the project company as the principal." *Id.* ¶ 2.7. The parties required "the project company" to "directly hire[] and manage[]" the core team. *Id.* And they required the management and operations teams to "prepare an operations plan (business plan) of the project company by May 31, 2016." *Id.*

The PCFA required UMC and the project company to work cooperatively to develop the technology. *See* P1023 ¶ 2.6(b). It required them to "separately execute a Technical Cooperation Agreement" that would cover the details of that cooperation and require "transferring research and development results in accordance with a phased plan." *Id.*

UMC and Jinhua signed the Technology Cooperation Agreement ("TCA") on May 13, 2016. *See* P1193T.0001. The TCA required UMC and Jinhua to "collaborate to engage in development of process technologies related to [DRAM]." P1193T.0001. "The site of the cooperative research and development is in a designated location in Fab12A… which is owned by [UMC]." *Id.* The TCA required UMC to "provide [Jinhua] with all necessary technical consulting and professional manpower required for manufacturing [DRAM]." *Id.* ¶ 3.1. Once UMC and Jinhua completed the development of two generations of process technology, all subsequent DRAM work, including future research and development, would occur at Jinhua. *See id.* at 1. The "technological achievements from the cooperative research and development by the two parties [would] be transferred to [Jinhua] in their entirety." *Id.*

The TCA contemplated a joint development effort, with joint ownership of the resulting intellectual property. The parties agreed that within five years from the signing of the TCA, UMC would "use the dedicated research and development equipment to develop the *joint* development technology under the Agreement, and the *joint* development technologies . . . [would] be *jointly* owned by both parties, and both parties also have the right to use." P1193T ¶ 2.4 (emphases added). *See also id.* ¶ 1.2

(joint ownership of intellectual property), ¶ 2.2 (parties to "jointly select" a design company), ¶ 3.1 ("joint development of technologies").

B. Stephen Chen and His Subordinates Worked to Set Up Jinhua, Recruit Employees, and Establish Jinhua's Operations

1. Stephen Chen and Bowen Huang Helped Form Jinhua and Actively Participated in Jinhua's Early Board Meetings

The Monday following the Friday signing of the PCFA, Yang Fang at FEIG emailed UMC's Huang and three others regarding "The work at JHICC." P1040T.0001. Huang led "project planning" for Project M and reported directly to Chen. P1034T.0029. The email sought Huang's assistance in coordinating a number of tasks "to complete the establishment procedures for [Jinhua] ASAP." P1040T.0001. The tasks included: confirming UMC's strategic investor in Taiwan, completing the Jinhua bylaws, arranging for appointment letters for directors and supervisors, confirmation of a "general manger candidate for the company," acquiring basic accounts, and other miscellaneous work. *See id.* Three days later FEIG circulated a draft of a Jinhua "DRAM production line project application" that included Micron's technology roadmap. P1039T.0019. The roadmap was the same roadmap Yoshinori Tanaka had sent to Chen in September 2015. *See* P1046T. Huang forwarded the draft to Chen on February 26, 2016, suggesting that FEIG "submit the draft as is, and we make no modifications." P768T.0001. Chen forwarded the draft to Sandy Kuo and another UMC employee on March 3, 2016. *Id.*

Chen and Huang also participated in early meetings of Jinhua's Board of Directors. On March 8, 2016, the Jinhua board met, with Chen and Huang in attendance. *See* P1036T. The draft Board minutes list Huang as the presenter on each of the four major topics discussed by the Board: (1) the "Review of Jinhua Company's Organization Structure," (2) the "Jinhua Company Development and R&D Team Formation," (3) Jinhua's "compensation structure," and (4) "Review of Jinhua Company's 2016 Fab Development Plan." P1036T.0002-0003. The recorder of the minutes sent the draft to Huang and others on March 14, 2016, in an email addressed to "Respectable Directors of the Board, Leaders." *Id.* at 0001.

Chen and Huang were also expected to attend and report at a Jinhua Board meeting on May 5-6, 2016. According the "Summary of Topics" for the meeting, Huang would report on "[c]ompensation issues," noting that Jinhua "plan[ned] to form an R&D team of approximately 100 people *through UMC*." P1034T.0102 (emphasis added). Team members would "sign a five-year contract with the

Jinhua Company, with part of the salary paid by the Jinhua Company." *Id.* The minutes of the Board meeting further explained that "Jinhua and [UMC] externally hired R&D talents" would "sign a five-year employment contract." P1032T.0002. Chen was to report, along with Lu Wensheng, on the status of the Jinhua "[t]eam [f]ormation," including the hiring of two persons as "assistants to the general manager of the company." *Id.* at 103. At the board meeting, Sandy Kuo presented about the formation of the research and development team at UMC. *See* P1032T.0005.

Within UMC, Chen oversaw things related to Jinhua. For example, in a May 25, 2016, UMC progress report circulated by Chen, UMC set forth the "JHICC Factory Construction Milestones," including the design and construction of the Jinhua fab and the purchase and installation of tools at Jinhua. P0823T.0001.

2. Stephen Chen Held Himself Out as a Jinhua Executive to Tool Vendors and Potential Jinhua Recruits

Chen visited Silicon Valley in October 2016 and personally presented an "Introduction to JHICC" to KLA-Tencor, a Bay Area semiconductor tools manufacturing company. *See* Trafas Tr., Vol. 17, 3134: 7-8. The presentation included the schedules for Jinhua's technology development, fab construct, and capital expenditures. *See* P0826; Trafas Tr., Vol. 17, 3113-3122. Based on Chen's presentation, KLA-Tencor Executive Vice President Brian Trafas understood that Chen was the CEO of Jinhua. *See id.* at Vol. 17, 3088:7-9, 3134:2-8. He further understood from speaking with Chen that UMC and Jinhua were in a joint venture and that Chen was responsible for the DRAM research and development at UMC. *See id.* at Vol. 17, 3094-3095.

During the same visit to Silicon Valley, Chen attended a Jinhua recruiting fair in Santa Clara. Chen spoke for 5-10 minutes and represented that he was the head of the sales and marketing division and the operations and manufacturing division at Jinhua. *See* Wu Tr., Vol. 4, 647:14-20, 648:22 – 649:6. Chen stated he was the subject matter expert in the chip technology, and therefore would be the division head and the person making hiring decisions for Jinhua. *See id.* 647:21-25, 657:11 – 658:22.

3. Stephen Chen, Sandy Kuo, and Bowen Huang Worked on All Manner of Jinhua Business Throughout 2016

As their participation in the Board meetings indicates, Chen, Sandy Kuo, and Huang were involved in day-to-day work for Jinhua from their offices at UMC. Chen was especially involved in

recruiting and hiring employees and executives for Jinhua, which occurred through UMC. Chen, for example, began recruiting Albert Wu to join the project in December 2015. *See* P1384T.0001. Chen told Wu his "participation and assistance is needed for us to jointly develop the business." *Id.* Chen later forwarded Wu's resume to UMC's human-resources department directing them to "study how UMC can make offer and compensation." P0799T.0001. By October 2016, Wu was a Vice General Manager at Jinhua, and served as the Chief Operating Officer. P0247 (Wu's business card); Wu Tr., Vol. 4., 659:23-3; P1026T.0002 (Wu to report as Jinhua's executive vice president); P1103T.0002 (Jinhua organization chart from January 11, 2017).

On June 2, 2016, Sandy Kuo emailed Huang with the subject "Hiring of Jinhua employees." P1099T.0001. She stated that Chen would "soon offer the hiring and duty assumption of Jinhua senior executives" and asked that Huang help make "employment contracts." *Id.* On September 2, 2016, a Jinhua employee sent Sandy Kuo an email titled, "Scanned employment contracts of GUO Fengming, LI Fuzhe and HE Jianting," stating, "Sandy: Good evening! Enclosed are the scanned employment contracts of the three persons: GUO Fengming, HE Jianting, and LI Fuzhe for your receipt and acknowledge!" P1089T.0001. Attached were employment contracts for each, with the contract period of five years beginning July 1, 2016. *See* P1089T.0002 (Guo); P1089T.0009 (Ho); P1089T.0016 (Lee). The scanned contracts were signed and stamped by Jinhua, but not by the three individuals. *See* P1089.0006/P1089T.0008 (Guo); P1089.0011/P1089T.0015 (Ho); P1089.0016/P1089T.0023 (Lee).

Chen's and his subordinates' work for Jinhua spanned minor and major corporate activities. Chen and Sandy Kuo helped select Jinhua's logo and sent it to Stan Hung. *See* P0816.0001. They planned a Jinhua employee-recruiting event in Silicon Valley, traveled there to gather resumes and recruit, presented to the attendees, and circulated resumes afterwards. *See* P696.0001; Wu Tr., Vol. 4, 645:18-19; P1390. They worked on the planning of Jinhua's groundbreaking ceremony and considered who should be invited. *See* P1091T. They provided UMC monthly updates to Jinhua employees and directed they use it to prepare reports for the Jinjiang government. *See* P1392.0001. And when a Jinhua employee needed the "Whole JV's Business Plan Project Business Plan," on July 14, 2016, he turned to Sandy Kuo. *See* P1029T.0001. That request sought information on, to name just a few examples: (1) "Production Process Flow Summary and Production Process Flow Description (for Jinhua)," (2)

"Process Production Equipment List," (3) names and specifications of "Raw and Auxiliary Materials for Process Production, (4) male-to-female ratio of employees, and (5) 3-5 year financial projections and capital expenditure plans. *Id.*; *see also id.* at 0002 (referring to "Director Bowen").

Chen and Huang also served as a voting members of a Quanzhou Municipal Government working group called the "joint step-up work meeting for the DRAM IC production line of Fujian JHICC." P1026T.0002, 0007. The group considered various issues related to hiring, chip design, and employee benefits, and made suggestions to Jinhua's board. *See id.* at 0003-0006. The group "authorized [Chen] to conduct initial evaluation of the qualifications and salary levels for the Taiwan candidates and for submission of his proposal to [Jinhua] to complete the hiring process." *Id.* at 0004.

4. Jinhua Formally Appointed Chen as the President of Jinhua No Later than December 2016

Jinhua had formally appointed Chen as President by at least December 6, 2016. Jinhua executives held a meeting that day in which "President [Chen] authorized Vice President [Albert Wu] to approve management authority for certain managers." P0613T.0002. During the meeting, Chen delegated certain "management authorities to Vice President [Albert Wu] to support the company's regular operations." *Id.* Chen delegated that authority because he would "remain in Taiwan for an extended period of time due to the R&D." *Id.* On December 19, 2016, Chen authorized Albert Wu to sign an asset acquisition report after Chen agreed to it. *See* P0609T.0001. Chen indicated he would "sign [the report] again" when he was "back at [Jinhua]." *Id.* By January 4, 2017, Jinhua's Deputy Director of Finance Wu Junsheng was asking "General Manager Chen" to review Jinhua financial reports. P0603T. After assuming his role as President of Jinhua, Chen continued to use his UMC account to conduct Jinhua business. *See, e.g.*, P0616T, P1418T, and P1420T. He also continued to work for UMC. *See* Trafas Tr., Vol. 17, 3132:15-23.

5. J.T. Ho, Sandy Kuo, and Bowen Huang Took Formal Positions at Jinhua

According to the "Labor Contract" seized from his UMC office, Ho became a Jinhua employee for a five-year term starting on July 1, 2016. P272.0001 (translation); Pan Tr., Vol. 5, 841:16 to 842:8 (seizure), 846:11 to 847:13, 850:7-18 (stamps and signatures). Jinhua appointed Ho to serve in the position of Director of Technological Research and Development, to engage in the work of Internal

Memory Process and Technology Research and Development. *See* P0272, ¶ 2.1. Jinhua agreed to pay Ho an "annual salary" and award an "annual bonus," among other benefits. *See id.*, ¶¶ 3.1 (salary), 3.3 (bonus), 5.1 (suitable labor conditions), 6.1 (social insurance). Jinhua acknowledged that Ho could "simultaneously hold a position and receive a salary from Taiwan [UMC]." *Id.* ¶ 11.1. But "[Ho's] employment at UMC" could not "influence [his] completion of work tasks for [Jinhua]." *Id.* ¶ 11.1

Sandy Kuo and Huang also came to occupy formal positions at Jinhua. On January 11, 2017, Sandy Kuo asked Chen to review a Jinhua organization chart she had revised. *See* P1103T.0001. The chart identified Huang as the "Vice President of Operations Resources," reporting directly to President Chen. *Id.* at 2; *see* P1503T (November 2017 audit report listing Huang as Jinhua Vice President). Sandy Kuo had an "@jhicc.com" email address at least by March 16, 2018. *See* P1531.

IV. Jinhua Bought, Received, and Possessed Micron's DRAM Process from UMC

In addition to knowingly possessing and using Micron's trade secrets as described above, Jinhua bought and formally received and possessed Micron's trade secrets from UMC through technology transfers at least in March 2017 (*see* P1192; Daly Tr., Vol. 19, 3671:5-3672:11 (UMC invoice and Jinhua payment); P1533 (table of TCA invoices and payments with dates) and September 2018 (*see* P1158/1158T, P1159/1159T, P1160/1160T, P1161/1161T (documenting UMC file transfers with signatures indicating "the successful delivery" of 25nm process DRAM technology to Jinhua)).

LEGAL STANDARD FOR MOTIONS UNDER CRIMINAL RULE 29

Federal Rule of Criminal Procedure 29(a) permits a district court to enter a judgment of acquittal "of any offense for which the evidence is insufficient to sustain a conviction."

In evaluating a defendant's motion for acquittal pursuant to Federal Rule of Criminal Procedure 29, "the relevant question is whether, after viewing the evidence in the light most favorable to the prosecution, *any* rational trier of fact could have found the essential elements of the crime beyond a reasonable doubt." *Jackson v. Virginia*, 443 U.S. 307, 319 (1979) (emphasis in original); *see United States v. Stargell*, 738 F.3d 1018, 1022 (9th Cir. 2013) (same); *United States v. Yossunthorn*, 167 F.3d 1267, 1270 (9th Cir. 1998) (same); *United States v. Tisor*, 96 F.3d 370, 379 (9th Cir. 1996) (same). In making this determination at the close of the government's case, a court "must respect the exclusive province of the [factfinder] to determine the credibility of witnesses, resolve evidentiary conflicts, and

draw reasonable inferences from proven facts, by assuming that the [factfinder would] resolve[ ] all such matters in a manner which [would] support [a guilty] verdict." *United States v. Gillock*, 886 F.2d 220, 222 (9th Cir. 1989) (quoting *United States v. Ramos*, 558 F.2d 545, 546 (9th Cir. 1977)); *United States v. Nelson*, 419 F.2d 1237, 1241 (9th Cir. 1969) (same) (affirming denial of a motion for acquittal).

"Moreover, circumstantial evidence and inferences drawn from it may be sufficient to sustain a conviction." *United States v. Reyes-Alvarado*, 963 F.2d 1184, 1188 (9th Cir. 1992), *as amended* (June 15, 1992); s*ee United States v. Hernandez,* 876 F.2d 774, 780 (9th Cir. 1989) (circumstantial evidence and inferences drawn from it sufficient to support possession conviction); *see also United States v. Katakis*, 800 F.3d 1017, 1028 (9th Cir. 2015) ("It is well established that the uncorroborated testimony of a single witness may be sufficient to sustain a conviction." (quoting *United States v. Dodge*, 538 F.2d 770, 783 (8th Cir. 1976))). The question "is not whether the evidence excludes every hypothesis except that of guilt but rather whether the trier of fact could reasonably arrive at its conclusion." *United States v. Nevils*, 598 F.3d 1158, 1165 (9th Cir. 2010). If any rational trier of fact could find the essential elements of the crime beyond a reasonable doubt, then the motion must be denied. See *id.* at 1164.

ARGUMENT

In its case-in-chief, the United States proved beyond a reasonable doubt that Jinhua is guilty of each of the three charges against it. The evidence proved the charged conspiracies, which Jinhua joined as a late-joining co-conspirator through its agents Ho and Chen, and that Jinhua knowingly possessed Micron's trade secrets through its agents.

In its Rule 29 motion, Jinhua did not contest all of the elements of the charges against it or even the existence of the alleged conspiracies. Instead, Jinhua disputed that the evidence introduced at trial proved its participation in the conspiracies.[3] With regard to Jinhua's participation in the conspiracies, Jinhua advances a group of arguments that all revolve around a common principle: Jinhua is not guilty because the various acts it took were simply normal business transactions that do not contain any criminal element. Thus: (1) signing the TCA was a legitimate business undertaking, and the TCA does

[3] The United States, recognizing this limitation, only addresses those same issues in this Opposition, and focuses on how Jinhua joined the conspiracies to possess and use Micron's trade secrets as well as how Jinhua possessed Micron's trade secrets. The United States will address all of the elements of the alleged crimes at closing.

not say anything about trade secret theft; *see* Dkt. 449 at 37-38; (2) signing labor contracts with Ho, Lee, and Guo was a legitimate business transaction that did not include an agreement to commit trade secret theft; *see id.* at 38-39; (3) having Chen represent it for hiring and tool purchases in October 2016 was a regular business undertaking and was outside of anything to do with trade secret theft;[4] *see id.* at 39-40; (4) hiring Chen as its President was a legitimate business decision and had nothing to do with trade secret theft; *see id.* at 40; (5) once Chen was Jinhua's President he made no agreements to steal trade secrets; *see id.* at 40-41; and (6) Jinhua's joint venture with UMC, if it existed, did not include an agreement to steal trade secrets or reveal Jinhua's knowledge of the theft of trade secrets; *see id.* at 41-44. Jinhua misunderstands the reason the government has introduced these acts in evidence, erroneously arguing that they were introduced at trial to show crimes by Jinhua, or at least conflating those acts with proof of criminality as straw arguments to knock down.

In fact, the government presented these acts to establish the *agency relationship* between Jinhua as a principal, on the one hand, and Chen, Ho, Lee, and UMC as agents, on the other. Rereading the above list with that purpose in mind highlights that the evidence at trial did in fact establish that Chen, Ho, Lee, and UMC were agents of Jinhua, as described below. Having established the agency relationship, the government introduced *other* evidence to show the *criminality* of Chen, Ho, Lee, and UMC (through Wang and others), as also described below. The criminal acts of agents within the broad scope of their agency are attributable to their principal. In this two-step process, the United States proved that Jinhua is guilty beyond a reasonable doubt.

[4] Jinhua asserts, Dkt. 449 at 24, that it engaged Chen to hire Jinhua employees and purchase tools for Jinhua's future facility. According to Jinhua, therefore, that activity was separate from the conspiracy to possess and use Micron's trade secrets. That argument, however, fundamentally misapprehends the technology. The co-conspirators used Micron's process flows, which includes the trade-secret steps, recipes, *and tools* to manufacture DRAM. *See, e.g.*, DeBoer Tr., Vol. 8, 1294:24 – 1296:7. Tools are just the physical manifestation of the process steps. *See id.* Vol. 8, at 1295:3-4 ("[E]ach step has a tool that's associated with it.") To know what tools to purchase, Chen must have known the process steps.

I. The Knowledge and Crimes of J.T. Ho and Stephen Chen are Attributable to Jinhua

Chen and Ho[5] were agents of Jinhua through express grants of authority by Jinhua to Chen in at least December 2016 and Ho as of July 1, 2016. Furthermore, the evidence admitted at trial proved that Chen was acting with at least apparent authority for Jinhua prior to his appointment as its President throughout most of 2016.

A. Criminal Respondeat Superior Liability for Corporations is Greater than Jinhua Contends

1. Corporations Are Criminally Liable for Their Agents' Acts Within the Broad Scope of Their Employment or Their Actual or Apparent Authority

For over a century, it has been clear that corporations are criminally liable for the acts and intent of their agents[6] provided that their agents act within the scope of their employment or their actual authority. That is because a corporation may act only through its agents, including officers, directors, and employees. The United States Supreme Court recognized this concept in 1909, holding that "we see no good reason why corporations may not be held responsible for and charged with the knowledge and purposes of their agents, acting within the authority conferred upon them. If it were not so, many offenses might go unpunished and acts be committed in violation of law where, as in the present case, the statute requires all persons, corporate or private, to refrain from certain practices, forbidden in the interest of public policy." *New York Central & Hudson River R.R. Co. v. United States*, 212 U.S. 481, 494-95 (1909) (citations omitted). The Supreme Court made clear that a "corporation is held responsible for acts not within the agent's corporate powers strictly construed, but which the agent has assumed to perform for the corporation when employing the corporate powers actually authorized, and in such cases there need be no written authority under seal or vote of the corporation in order to constitute the agency or to authorize the act." *Id.* at 493-94. It is therefore certain that a corporate agent acting within the

[5] Lee and Ray Guo are also agents of Jinhua by the express contracts between each of them and Jinhua, but for purposes of this motion, the government will focus on Ho.

[6] "An agent is a person who performs services for another person under an express or implied agreement and who is subject to the other's control or right to control the manner and means of performing the services. The other person is called a principal. One may be an agent without receiving compensation for services. The agency agreement may be oral or written." Ninth Circuit Model Civil Jury Instruction 4.4 (Agent and Principal - Definition).

scope of the agent's broadly-defined agency – that is, performing acts "on behalf of a corporation and directly related to the performance of the type of duties the employee has general authority to perform" – is an appropriate ground for finding a corporation criminally liable. *United States v. Am. Radiator & Standard Sanitary Corp.*, 433 F.2d 174, 204-05 (3d Cir. 1970) (affirming jury instruction).

Subsequent case law has further settled that the scope of an agent's authority to bind a corporation criminally includes an agent's apparent authority as well. As the Ninth Circuit Court of Appeals has explained, "Congress may constitutionally impose criminal liability upon a business entity for acts or omissions of its agents within the scope of their employment. Such liability may attach without proof that the conduct was within the agent's actual authority, and even though it may have been contrary to express instructions." *United States v. Hilton Hotels Corp.*, 467 F.2d 1000, 1004 (9th Cir. 1972); *see also United States v. Beusch*, 596 F.2d 871, 877-78 (9th Cir. 1979) (affirming jury instruction: "A corporation may be responsible for the acts of its agents done or made within the scope of its authority, even though the agent's conduct may be contrary to the corporation's actual instruction or contrary to the corporation's stated policies."); *Am. Radiator & Standard Sanitary Corp.*, 433 F.2d at 205 (affirming jury instruction: "When the act of the agent is within the scope of his employment or his apparent authority, the corporation is held legally responsible for it, although what he did may be contrary to his actual instructions and may be unlawful."); *United States v. Mongol Nation*, 370 F. Supp. 3d 1090, 1128-29 (C.D. Cal. 2019) (quoting and restating *Hilton Hotels Corp.*, 467 F.2d at 1004). It is therefore clear then that beyond actual authority, a corporate agent acting within the agent's apparent authority – "the authority which outsiders could reasonably assume that the agent would have, judging from his position with the company, the responsibilities previously entrusted to him, and the circumstances surrounding his past conduct." – also serves as an appropriate ground for finding a corporation criminally liable. *American Radiator & Standard Sanitary Corp.*, 433 F.2d at 205 (affirming jury instruction); *accord United States v. AU Optronics Corp.*, No. 09-CR-00110 SI (N.D. Cal. Mar. 1, 2012), Dkt. 829 (Final Jury Instructions) at 15-16.

"Scope of employment" is not confined to its strict agency definition, but instead applies to acts directly related to the performance of duties which the officer or agent has the broad authority to perform. *See United States v. Carter*, 311 F.2d 935, 941-42 (3d Cir. 1963) ("It is essential, however, to

corporate guilt, that its officer's or agent's illegal conduct be related to and done within the course of his employment and have some connection with the furtherance of the business of such corporation."); *Continental Baking Company v. United States*, 281 F.2d 137, 149-50 (6th Cir. 1960) ("the courts have held that so long as the criminal act is directly related to the performance of the duties which the officer or agent has the broad authority to perform, the corporate principal is liable for the criminal act also, and must be deemed to have 'authorized' the criminal act."). It includes acts on the corporation's behalf in performance of the agent's general line of work. *See Hilton Hotels*, 467 F.2d at 1004; *United States v. Automated Medical Laboratories, Inc.*, 770 F.2d 399, 407 (4th Cir. 1985); *United States v. Armour & Co.*, 168 F.2d 342, 344 (3d Cir. 1948).

2. A Corporation is Bound by Every Agent Acting Within the Broad Scope of His or Her Employment or Actual or Apparent Authority, Not Just Top Managers

Federal criminal law is clear that a corporation is liable for its agent without regard to the agent's status in the corporate hierarchy.[7] Thus, while directors and executives obviously may be the basis of criminal liability, *see, e.g., Carter*, 311 F.2d at 942, so too may lower level managers create criminal liability for their corporations. Thus, corporations have been found guilty through the criminal acts of sales managers, *see, e.g., American Radiator & Standard Sanitary Corp.*, 433 F.2d at 174; depot managers, *see, e.g., Continental Baking Company*, 281 F.2d at 137; production managers, *see, e.g., United States v. Steiner Plastics Mfg. Co.*, 231 F.2d 149 (2d Cir. 1956); and general foremen, *see, e.g., United States v. Dye Construction, Co.*, 510 F.2d 78 (10th Cir. 1975) (pipe laying crew consisting of supervisor, foreman, and back hoe operator), *United States v. Milton Marks Corp.*, 240 F.2d 838 (3d Cir. 1957) (foreman).

Furthermore, a "corporation may be criminally bound by the acts of subordinate, even menial,

[7] Jinhua argues that "it can only be held criminally liable 'for the act of an advisory or managerial person acting in the scope of employment.'" Dkt. 449, at 34 n.18. To make this argument, Jinhua relies on an analogy to "quasi-criminal" punitive damage cases. *See id*. But the limits on punitive damages stem from the Due Process Clause, *see, e.g., State Farm Mut. Automobile Ins. Co. v. Campbell*, 538 U.S. 408, 417-18 (2003), and Jinhua offers no argument why imposing criminal liability on a corporation for the criminal acts of an agent that it can control violates due process. To the contrary, *New York Central & Hudson River R.R. Co.*, 212 U.S. at 496, explained that imposing respondeat superior liability on a corporation for the crimes of its agents is "the only means of effectually controlling the subject-matter and correcting the abuses aimed at."

employees." *Standard Oil Co. v. United States*, 307 F.2d 120, 127 (5th Cir. 1962) (reversing on other grounds). Thus, corporations have been found guilty through the criminal acts of salespeople, *see, e.g., United States v. George F. Fish, Inc.*, 154 F.2d 798 (2d Cir. 1946); truck drivers, *see, e.g., United States v. Harry L. Young & Sons, Inc.*, 464 F.2d 1295 (10th Cir. 1972); clerical workers, *see, e.g., Riss & Co. v. United States*, 262 F.2d 245 (8th Cir. 1958) (terminal log clerk); and manual laborers, *see, e.g., United States v. Illinois Central R.R.*, 303 U.S. 239 (1938) (employee whose duty was unloading cattle from carrier), *Dollar S.S. Co. v. United States*, 101 F.2d 638 (9th Cir. 1939) (crew member emptying garbage). As the Second Circuit explained in *George F. Fish, Inc.*:

> No distinctions are made in these cases between officers and agents, or between persons holding positions involving varying degrees of responsibility. And this seems the only practical conclusion in any case, but particularly here, where the sales proscribed by the Act will almost invariably be performed by subordinate salesmen, rather than by corporate chiefs, and where the corporate hierarchy does not contemplate separate layers of official dignity, each with separate layers of official dignity, each with separate degrees of responsibility. The purpose of the Act is a deterrent one; and to deny the possibility of corporate responsibility for the acts of minor employees is to immunize the offender who really benefits, and open wide the door for evasion.

154 F.2d at 801. The rationale for imposing criminal liability rests in part on the concept of delegation: since high-level employees must, in modern corporate life, delegate power and authority for a corporation to function, the company must carefully select and supervise its agents who are authorized to carry out company business. *See United States v. E. Brook Matlock, Inc.*, 149 F. Supp. 814, 820 (D. Md. 1957)("Thus the corporation cannot avoid responsibility by merely saying that a subordinate agent neglected his duty."). As noted above, the limitation on corporate liability for its agents is instead premised on whether the agent in question was acting within the scope of his or her agency relationship of his or her actual or apparent authority, not on the agent's position within a hierarchy.

3. A Corporate Agent Need Only Intend His or Her Act to Benefit the Corporate Principal In Part

Jinhua contends that the corporate agent's purpose must be to benefit the corporate principal, implying that the agent cannot intend to benefit *both* the corporation and the agent. *See* Dkt. 449, at 33:23 & 35:12. Contrary to Jinhua's contention, a corporation is liable for its agent's criminal acts if the agent intends *in part* to benefit the corporation; he or she may also intend to benefit himself or herself. *See Automated Medical Laboratories, Inc.*, 770 F.2d at 407; *United States v. Gold*, 743 F.2d 800, 823

(11th Cir. 1984). It is not necessary that the actions have actually benefitted the corporation. *See Automated Medical Laboratories, Inc.*, 770 F.2d at 407; *Carter*, 311 F.2d at 942. *See also, e.g.,* Eighth Circuit Model Criminal Jury Instruction 5.03, Committee Comments ("The agent need only intend in part to benefit the corporation. He may also intend to benefit himself."); Fourth Circuit (D.S.C.) Model Criminal Jury Instructions VII.G (agent "motivated, at least in part, by an intent to benefit the corporation").

As described below, applying these corporate criminal respondeat superior principles to the facts of this case leads inexorably to the conclusion that Jinhua is guilty of all three charges alleged against it.

B. As of July 1, 2016, Ho Was an Agent of Jinhua and Jinhua is Guilty Through J.T. Ho's Possession and Use of Micron Trade Secrets

1. J.T. Ho was an Agent of Jinhua

Under the settled law of agency, Ho is an agent of Jinhua because the Labor Contract both Jinhua and Ho signed expressly established an agency relationship and Ho was acting within that scope of his agency when he possessed and used Micron's Trade Secrets. *See* P0272.

The Labor Contract made Ho an agent of Jinhua, for a period of five years, beginning on July 1, 2016. *See* P0272 ¶ 1.1. Jinhua gave Ho a title: "Director of Technological Research and Development," and a job description, "Internal Memory Process and Technology Research and Development." *Id*. ¶ 2.1. Accordingly, Jinhua expressly told Ho what work he would perform on behalf of Jinhua, that is, what his scope of agency was. Both Jinhua and Ho signed the contract and affixed each's respective seals. *See* P0272.009 (English translation); P0271.002 (Chinese original).

Jinhua imposed requirements on Ho, including requiring Ho (Party B) to report to Jinhua (Party A):

> In accordance with Party A's requirements, Party B shall regularly report to Party A via email, written files, and other forms on the work situation, including but not limited to weekly and monthly work reports, project research reports, as well as other reports related to Jinhua projects. The quality of service of Party B shall conform to the assessment requirements of Party A and United Microelectronics Corporation.

P0272 ¶ 7.2. This section requires Ho to report in writing to Jinhua. It also allows *both* Jinhua and UMC to judge Ho's work. The dual assessment makes sense in light of the entire contract between Ho and Jinhua, as well as informed by the TCA. Under the plain terms of the Labor Contract, Jinhua agreed to share Ho with UMC, and expressly acknowledged that during the period of the contract, Ho can

"simultaneously hold a position and receive a salary from Taiwan United Microelectronics Corporation." *Id.* ¶ 11.1. This provision, as well as the Labor Contract specifying Tainan, Taiwan, as the place of Ho's work, *see id.* ¶ 2.2, is consistent with the TCA providing that Tainan, Taiwan, as the site of the cooperative research and development. *See* P1193.0001.

Critically, Jinhua owned the technological achievements that Ho made during his agency:

> During Party B's term of working for Party A, relevant intellectual property rights arising due to the performance of job duties shall all fall under the ownership of Party A, and Party A may fully and freely utilize them within the scope of business, and use them in applications for rights protection, production and operations, or transfer to a third party.

P0272 ¶ 7.1. This joint ownership of the technology is consistent with the TCA:

> The intellectual property rights under the Agreement refer to the patent rights, trade secrets, and the right to circuit layout of integrated circuits and other intellectual property rights which are jointly acquired by both parties cooperatively developing technologies worldwide under the agreement.

1193T ¶ 1.2. Indeed, consistent with both its Labor Contract with Ho and the TCA, Jinhua owned Ho's inventions made as Jinhua's agent, and Jinhua applied for patents in Ho's name and reported on these in its 2016 Annual Report, which Albert Wu sent to Chen. *See* P0606T.0033 (August 2016 application of two patents with Ho as the inventor). The fruits of Ho's work thus flowed both to Jinhua and to UMC, consistent with the agreements between the two corporations and Jinhua's agreement with Ho—which it sent to UMC. *See* P1089T.0001 (Jinhua employee Jack Hong emailing Ho, Lee, and Guo's contracts to Sandy Kuo at UMC "for your receipt and acknowledge!").

Although Jinhua tries to use UMC's additional control over Ho to escape responsibility for Ho, Dkt. 449 at 55:16 (suggesting that because Ho worked at UMC and not at Jinhua in the PRC, Ho is not an agent), this argument is unpersuasive for two reasons. First, Jinhua expressly contracted to share Ho's work with UMC in the Labor Contract. Second, an agent can serve two masters. *See* RESTATEMENT (SECOND) OF AGENCY § 220d ("When two persons are engaged in a common undertaking, it may be understood that there is to be joint control, as where two men hire an automobile for a vacation trip, alternating in driving."); *see also* RESTATEMENT (SECOND) OF AGENCY § 226a (describing independent services for two masters and that liability may fall on both masters). Indeed, Jinhua's express contracting to share Ho with UMC while he worked at UMC's Fab 12A is yet another manifestation of the joint venture existing between the two companies, and so does not shield Jinhua.

Also seeking to disavow the contract, Jinhua seeks to inject uncertainty into the validity of the contract by suggesting that Ho may have signed it later than July 1, 2016. But the contract is clear about its terms and can be applied consistent with the express terms without any ambiguity or interpretation. *United States v. Nunez*, 223 F.3d 956, 958 (9th Cir. 2000) ("under the parol evidence rule, a court looks to, and enforces, the plain language of a contract and does not look to 'extrinsic evidence'…to interpret…the terms of an unambiguous written instrument") (citations omitted). No witness testimony is needed to explain the terms of the contract, *see* Dkt. 449 at 55:21-22, because the contract unambiguously sets out the terms.

Jinhua's persistent effort to place the liability only on UMC by asserting that Ho may have been acting within the scope of his authority for UMC but could not have been within the scope of agency for Jinhua, Dkt. 449 at 56:7-10, does not square with the plain terms of Jinhua's signed and stamped contract. Jinhua knew that Ho was working at UMC as well, and Jinhua chose to pay him more money and reap the benefits of his work. In short, Ho was a shared agent, and Jinhua and UMC both benefitted from his work as "Director of Technological Research and Development" working on "Internal Memory Process and Technology Research and Development." P0272.003. The scope of that work – memory process and technology research and development – is the precise scope of work relevant to Ho's possession and use of Micron's Trade Secrets, as described below.

2. J.T. Ho's Crimes are Attributable to Jinhua

Jinhua is responsible for Ho's participation in the conspiracy, including Ho's possession of Micron Trade Secrets on Devices 11, 12, 14, and 28, as well as his use of those trade secrets to advance the joint DRAM development. Put differently, Ho's knowledge and actions as an agent for Jinhua is sufficient to prove each count against Jinhua, without reference to any other agent. On the conspiracy counts, Ho possessed trade secrets and conspired with others, including Chen, Lee, and Wang. As it concerns the economic espionage count, Ho knowingly possessed the Micron trade secrets throughout the entire time period discussed at trial, and throughout he knew and intended that he (and UMC) was developing DRAM to benefit the PRC. At UMC, the name "Project M" meant "Memory and Mainland China" according to UMC's CEO. P0730.0001. The evidence established that as of February 2016—while Ho possessed and used the Trade Secrets—he told Wang by LINE chat that UMC was partnering

with Mainland China. *See* P0270 at Excerpt 7.

Further, Ho's boss, Chen, was working months before July 1, 2016, on the UMC-Jinhua relationship, and in February 2016 and May 2016, UMC signed the two key contracts. Thus, there is ample evidence that Ho, Chen, Lee, and others had knowledge of who the technology was intended to benefit, and certainly it is fair to infer from this evidence that Ho and others knew Jinhua was an asset of PRC governmental entities. *See* Dkt. 449 at 39 n.10. Further, Ho's knowing and intentional possession of the trade secrets after July 1, 2016, when Ho became an agent of Jinhua and he was without question aware that it was owned by the PRC, is sufficient to convict Jinhua. The evidence established Ho's continuing possession of Trade Secrets on Devices 11, 12, and 14 throughout the relevant time period, at least until the execution of the Taiwanese search warrants in February 2017. *See United States v. Krstic*, 558 F.3d 1010, 1017-18 (9th Cir. 2009) ("Possessory offenses have long been described as "continuing offenses" that are not complete upon receipt of the prohibited item.").

Finally, it cannot be seriously questioned that the DRAM manufacturing process flow information contained in the alleged Micron trade secrets falls within the scope of Ho's agency with Jinhua as Jinhua's "Director of Technological Research and Development" working on "Internal Memory Process and Technology Research and Development." P0272.003. Jinhua was founded exclusively to make DRAM. Ho worked on nothing else.

C. Stephen Chen was an Agent of Jinhua and Jinhua is Guilty Through Stephen Chen's Knowledge and Intent Regarding his Co-Conspirators' Possession and Use of Micron Trade Secrets

1. Stephen Chen was Jinhua's Agent

For the purposes of Jinhua's guilt, the precise date at which Chen became Jinhua's agent does not matter, whether it be February 2016, when Jinhua was founded, or December 2016, when he was clearly Jinhua's President, or January 2017, when Chen's presidency was announced, or September 2018, when the conspiracy was alleged to have ended. Under the law discussed below regarding late joining co-conspirators, all of those dates establishes Jinhua's knowing participation in the conspiracies.

(i) Stephen Chen was Jinhua's Agent as of December 2016

Chen was Jinhua's President as of December 2016, though likely sometime before. At that time, Jinhua had a meeting in which it determined that President Chen would remain in Taiwan to handle

research and development and authorized Vice President Albert Wu to take over certain management functions. *See* P0613T.0002. The plain language of the delegation and the inference to draw from it is that Chen had authority as of that date to delegate, and so he must have obtained it at some point prior. Though the precise date his presidency started is unclear, from December 2016 forward, Chen was an officer of Jinhua. *See, e.g., Carter*, 311 F.2d at 942 (premising corporate liability on the acts, knowledge, and willfulness of president, who was "chief executive officer with the general supervisory authority that attends such office"). Communications to Chen after December 2016 demonstrate that Chen was the top executive of Jinhua with broad authority. *See* P1085.0001 (March 1, 2017 email to General Manager Chen requesting his signature as "main person in-charge of the enterprise."); P1503T.0001 (November 24, 2017 email from Deputy Finance Director to Chen and three others referred to as the "management team of the company").

(ii) Stephen Chen was Also an Agent of Jinhua Prior to December 2016

The evidence established that Chen was actually—or at a minimum held himself out to be—Jinhua's agent prior to December 2016. For example, in October 2016, Chen traveled to Silicon Valley together with other officers of Jinhua and spoke about and on behalf of Jinhua. Chen presented to executives at tool vendor KLA-Tencor, while other Jinhua executives and persons were present, and left the impression that he was the CEO of Jinhua. *See* Trafas Tr., Vol. 17, 3134:2-8. Thus, as of October 2016, Chen had apparent authority for Jinhua, but it is also fair to assume that Chen had actual authority as well. That is because no one at Jinhua stood up to take the microphone – literally or figuratively – from Chen while he presented at KLA-Tencor or at the CASPA recruiting event. Given the broad scope of Chen's presentation—which covered all aspects of Jinhua's business plan, including its planned wafer outputs and capital expenditures from 2016-2020 as presented to KLA-Tencor—it is not the case that Chen's agency prior to December 2016 was limited in scope to hiring. *See* Dkt. 449 at 34.

Indeed, it is a fair inference from the evidence that UMC and Jinhua intended Chen from February 2016 onwards to take the helm at Jinhua. The PCFA that gave rise to the formation of Jinhua and gave UMC the responsibility of naming the General Manager, *see* P1023T ¶ 5.4, and by January 4, 2017, Jinhua's Deputy Finance Director had emailed Chen, greeting him as the General Manager. In the interim, Chen was acting on behalf of Jinhua in all of the ways discussed herein, and at any (and all)

points in that timeframe, Chen was acting as Jinhua's agent.

2. Stephen Chen's Knowledge and Role in the Conspiracies

The evidence established beyond a reasonable doubt that Chen knew, and intended, that his "team"—Ho and Lee—was developing DRAM on a foundation of stolen Micron technology in the following key ways. Accordingly, Jinhua's arguments that Chen thought he was conducting a legitimate business venture as the head of Project M and future President of Jinhua are undermined by the evidence admitted at trial. *See*, *e.g.,* Dkt. 449 at 37-44.

First, Chen was uniquely positioned to develop a DRAM business plan based on his knowledge of Micron's business and technology, with which he was intimately familiar. Chen was a former executive at Rexchip, which manufactured Elpida DRAM, and at Micron, which purchased Rexchip and Elpida. *See* P1047T.0003-0004 (Chen's presentation about his work history and leadership journey, with President of Rexchip as the zenith of his career); *see also* Trafas Tr., Vol. 17, 3091:4-24. Therefore, Chen was familiar with Elpida, Rexchip, and Micron technology and the terminology. Each time the conspiracy—including Chen—used Elpida, Rexchip, and Micron references and information, Chen knew the information was Micron's.

The earliest example of Chen's use of Micron information comes in the days after Chen left Micron and as he headed in the door at UMC where Chen would launch the new DRAM program. On September 14, 2015, Yoshinori Tanaka forwarded Chen four slides, which Chen then forwarded to Huang, who incorporated them into UMC's Business Plan. *See* P1046T.0001. None of this information said "Micron," but Tanaka's email and the materials he forwarded to Chen's personal email at Chen's request were exactly the type of information that Chen would understand to refer to Micron by virtue of his deep knowledge of Micron's technology. In the cover email, Tanaka advised Chen to deal with the "tough point" of 2x3 and to "change" to a 3x2 cell design at the 20nm node. P1046.0001; *see* Dyer Tr., Vol. 16, 3040:12-21; DeBoer Tr., Vol 8. 1369:3-1370:9. Chen was not working for any DRAM company on September 14, 2015, so he should not need to "change" to anything. Further, UMC had no DRAM, and so Chen again would have had nothing to "change" when he started at UMC. At bottom, when starting a new DRAM business that had not legally acquired any technology, Chen should have been creating, not changing.

Even more significant, Chen was uniquely positioned to know that there was only one DRAM manufacturer who used 2x3 DRAM cell structures: Micron. Thus, Chen knew that the slides that Tanaka sent to Chen—at Chen's request—were Micron's because they included Micron's technology roadmap from 2014 to 2020. *See* DeBoer Tr., Vol. 8, 1369:3-1370:9 (explaining that at 25nm, Micron "uniquely" used 2x3 cell structure). The technology roadmap from Tanaka to Chen specified that for 2014, 2015, and 2016, the cell structure was "6F(2x3)." P1046.0003. Then, the slide read for 2017-2020 "6F (2x3 or 3x2)." *Id*. Only Micron had 2x3 cell structures and only Micron had not already transitioned to 3x2 cell structures at that time. *See* DeBoer Tr., Vol. 8, 1369:3-1370:9.

What Chen did with Micron's information is probative to Chen's knowledge and intent: he forwarded it to Huang at UMC, who put the Micron information, including the roadmap, into UMC's business plan for DRAM development with Mainland China. *See* P0707T.0041-0044. Including Micron's technology roadmap starting in 2014 and including the nodes by year that Micron was manufacturing at 2x3 was bold, and prone to detection by anyone paying attention who would know that UMC had *no* DRAM in 2014 or 2015, let alone at a 2x3 cell structure. Chen was the person best positioned to know that (1) UMC did not have that technology; (2) Micron did; and (3) only Micron used 2x3 DRAM cell structures as depicted on the technology roadmap.

Once Chen's team of Ho and Lee started at UMC, Chen regularly corresponded with them by email and provided feedback on their work, again receiving information that he would immediately recognize as too advanced to be the work of engineers starting from ground zero of any development of new technology, and also recognize as being Micron-derived. For example, Ho sent Chen information about Elpida BEOL DRAM on November 17, 2015, *see* P0718.0001-0002, and then followed up shortly after to Chen and others, revising the explicit Elpida references to "benchmark company 20nm data." P0719.0001. Notably, although Jinhua claims that Samsung was UMC-Jinhua's benchmark company, the way the conspiracy treated Samsung information shows otherwise. In this exact email correspondence, for example, Ho openly referred to Samsung, but renamed Elpida to "benchmark." A week later, Ho sent Chen and Lee an email titled "DRAM M1 AL condition (benchmark X company)." *See* P0731T.0001. Critically, the email again uses language about "change" and the attached document includes Micron-specific language that Chen would know well: "F15," the Micron name for its fab in

Japan, which had formerly been Elpida. In many instances, and as further discussed herein, Chen responded and commented on the emails Ho sent him, including providing feedback and suggesting further discussion. *See e.g.*, P0721, P0736T.

In addition to receiving information by email that showed Ho and Lee using Micron information, Chen was aware of and participated in the December 2015 UMC DRAM process flow planning meeting. P0741T.0001. The documents that Ho and Lee used directly referred to Rexchip's and Elpida's fabs, R1 and E300, respectively. *See* P0482T. While some UMC personnel who had never worked at Rexchip or Elpida might be able to claim that they did not recognize that Ho and Lee were leading a meeting based on Rexchip and Elpida information, Chen was not any such person. The opposite is true: Chen, who confirmed he would join the Project M planning meeting on its second day, December 8, 2015, was intimately familiar with this terminology. Indeed, Chen was the President of Rexchip and responsible for the R1 fab, and he was unquestionably aware of the Elpida E300 fab.

In other ways, the language used in the December meetings was overt that the technology was not being developed from scratch. For example, on Tuesday, December 8—the day Chen indicated he would join the meeting, P0741T—the minutes demonstrate that the team considered "[w]hy 1F [Argon] annel (1F.FFE10) . . . temperature 150 degrees." P0482T "Follow item "tab, row 22. "1F.FFE10" is an internal Micron/Rexchip code for a specific anneal process step that with a recipe that uses a 150 degree temperature. *Id.* 25nm 4G3D Flow tab, row 34, columns A-F, R-S. The Project M Engineers coded that step as a high risk level of 3, due to a concern about a "New Recipe condition for UMC." An experienced DRAM engineer-turned-executive like Chen would understand that a brand new team working to create brand new technology could not possibly be discussing a "new recipe condition" and would have recognized that instead the team was using Micron terminology.

Bookending the timeframe of the charged conspiracy, in August 2018, Chen sent Micron's "Mass Market Roadmap" to Jinhua. *See* 1422.001. Chen was intimately familiar with the technology that Micron acquired from Elpida from his time at Micron—chiefly the 25 nanometer technology at the heart of UMC and Jinhua's technology plan. Chen therefore knew that he was using Micron's technology to build DRAM on the Micron roadmap timeline when he referenced it over the course of the conspiracy and near the end of conspiracy. However, in August 2018, Chen circulated a roadmap

covered in Micron confidential watermarking, removing any doubt that Chen knew. The value of these roadmaps to Chen and his "team" working busily with the Micron trade secrets was significant: with Micron's technology in hand through Ho, Lee, and Wang—his employees from Rexchip and Micron—Chen was able to use Micron's future development and projections to construct UMC's and Jinhua's DRAM roadmap. *See* DeBoer Tr., Vol. 8, 1384:3-8. As an experienced DRAM executive, Chen used all sorts of Micron confidential information to build UMC's and Jinhua's new DRAM business.

Second, and overlapping with the above discussion, the timeline of the early days of Ho and Lee's work at UMC demonstrates Chen's involvement. In Ho's and Lee's first days at UMC, Chen personally approved opening their UMC laptop's USB ports, a necessary step for use of USBs containing Micron's trade secrets at UMC. Shortly thereafter, UMC discovered Ho and Lee accessing Micron trade secrets and other Micron confidential documents. The log files from Ho's and Lee's UMC computers are literally a running list of Micron terms: Rexchip, Elpida, 25nm, 20nm, and other Micron-specific code terminology for its products. Lee was filing his documents in a folder called "secret project" while working with Ho, the only other engineer on Chen's "team." *See* P0889T. Further, UMC Information Security Supervisor Chang stated that he reported the suspicious behavior to his supervisor, H.H. Chou, and that UMC procedure was for it to be elevated to a further supervisor. *See* Vol. 3, 586:17 to 588:5. It seems unlikely that Chen—who approved the USB access that enabled Lee's and Ho's rapid accessing of stolen Micron trade secrets—did not learn of the detection. The conclusion that Chen was notified is even more likely when considered with two facts: first, Chen was the person most well positioned to recognize the files that Ho and Lee were accessing. Second, on December 4, 2015, UMC detected Ho's and Lee's conduct, gave them new SSDs at the request of a "VIP" (which could only be Chen in context), and issued two laptops but did not declare the owner of those laptops, one of which was recovered and is referred to as Device 12. Forensic analysis squarely puts that laptop in Ho's and Lee's hands starting December 7, 2015, which was the first day of the two-week-long Project M DRAM development meeting that Lee and Ho led under Chen's supervision. Ho and Lee used Device 12 from just after it was issued in December 2015 until just prior to MJIB seizing it—with 63 openings of Micron Trade Secrets in that timeframe.

Third, Stephen Chen, as an experienced DRAM executive, knew how much time, money, and

talent went into technology research and development. It is not in dispute that Chen was experienced in DRAM, given that Chen and UMC marketed Chen as experienced in DRAM. *See* P1047T.0004, P0707T.0038. Chen had been a DRAM engineer himself, *see* P1047.0003-0004, and built his way into executive leadership, not unlike witnesses Scott DeBoer and Mark Durcan from Micron who were engineers-turned-executives, and still deeply aware of the technology and able to testify concretely and specifically about it.

Chen knew that UMC-Jinhua's development timeline, expenses, and lack of talent would not suffice. As it concerned the proposed development timeline, Chen knew that starting from scratch, with no prior DRAM node to build from, made the timeframe set out in the TCA too short. UMC had no DRAM research and development in September 2015, when Chen started. *See* Yu Tr., Vol. 3, 701:3-7; P1022T.0005, Trafas Tr., Vol. 17, 3116:10-16. Nevertheless, in May 2016, the same month the TCA was signed, Chen wrote: "we proposed 2 generations development (F32/F32S) in 4 years, 18nm can be internal aggressive plan." P0823T.0003. Chen then asked Sandy Kuo to develop a roadmap accordingly. *See id.* Plainly, Chen was intimately involved in—even leading—the timing proposed and adopted for the UMC-Jinhua joint development of DRAM. It is a logical inference from the evidence that Chen, an experienced DRAM executive who manufactured node after node of Elpida's technology at Rexchip, knew that this timeframe was not consistent with starting from where UMC was at—zero DRAM.

For reference, Dr. DeBoer testified that when Micron developed the 20nm DRAM, it was building off of its prior technology (the 25nm DRAM it purchased from Elpida and Rexchip) by reusing "a bit less than 80 percent" of the 25nm node, and that was still a "three-to four-year program" to get to the next node. *See* DeBoer Tr., Vol 8., 1323:10-1324:4.[8] As a matter of prior experience, it is critical to point out that at the time that Micron was transitioning from the Elpida 25nm node to a new 20nm node, Chen was running a Micron facility and producing Micron DRAM. Chen had therefore been in the precise job to know that DRAM could not realistically be developed from ground zero on the same type of timeframe that it took Micron to build from one generation to the next. By the time that Chen

[8] Industry expert Terry Daly explained that "from scratch" – a term that Chen and Huang used in their planning documents – at a logic foundry would look different than at a memory company that could reuse 80 precent of the process from the prior node. *See* Daly Tr., Vol. 20, 3728:10-21. Daly testified that "if you're going from logic to DRAM, you've got a much, much bigger step." *Id.*

recommended a four year and two generation strategy, though, he knew how far his team had come in developing the technology built off Micron's stolen trade secrets. Chen had sat in the process flow development meeting in December 2015, and he was up to date on the development status. Another industry veteran also familiar with Micron – Mark Durcan, Micron's former CEO – looked at UMC's and Jinhua's development timeline and observed that the timeframe that Jinhua, as a new entrant in DRAM, had set for research and development seemed shorter than he would expect and in fact was the same length that an "incumbent" in the industry "that had all the previous decades of learning and trade secrets and know-how, et cetera." Durcan Tr., Vol. 19, 3601:9-19.

Chen also knew that the true costs and actual manpower requirements needed to build a DRAM team were well beyond what UMC and Jinhua proposed in the TCA. Chen knew because Micron had just acquired Rexchip, the company Chen was President of, for about $2.5 billion. *See* Durcan Tr., Vol. 19, 3587:17-19. Soon after, Micron was spending about $1 billion per node to develop DRAM. *See* DeBoer Tr., Vol. 8, 1323:18-22; *see also* Daly Tr., Vol. 19, 3646:2 – 3647:23 7; 3651:5 – 3652:3; Daly Demonstrative 3. Nevertheless, Chen's and Huang's UMC business plans from the fall of 2015 somehow priced the costs of building a team to develop DRAM at $300 million—even more than the $200 million Jinhua was set to pay UMC pursuant to the TCA. *See* P1193T.0010. The math does not add up, and as the DRAM leader at UMC with deep and long experience running DRAM companies, Chen knew it.

In addition, the same "team building" planning slide in the UMC planning document circulated among Chen, Huang, and UMC Chairman Stan Hung in October 2015 noted that there would need to be 250 personnel involved. *See* P0709T.0008. But at the start of the project in November 2015, Chen had only two DRAM engineers in all of UMC: his recruits Ho and Lee. Chen represented that he was planning to build a team composed of internal UMC logic engineers. *See* P0889T. From then on, Chen, together with Sandy Kuo and others, went through various recruiting efforts to get personnel, with great challenges. Indeed, six months later, in May 2016 when the TCA was signed and when Chen was announcing his "internal aggressive plan," Project M was still nowhere near 250 engineers. In fact, in May 2016, Chen led a team that had grown from two to approximately 16 people, some of whom were part-time. *See* P1034T.0029. Half of the organizational chart below Chen was empty, and that half-

empty chart was provided to the Jinhua Board of Directors together with an update on "progress of the project talents arrived at post." *See* P1034T.0027. That progress report included this assessment: "currently persons arrived at post are 25% of the 2016 target and 55% if adding the pending arrivals." *Id.* Chen had an aggressive timeframe, and too few people and too few dollars to do it, if he were in fact developing technology from the ground up. But Chen knew that he was not starting the project from ground zero. Instead, Chen knew that his team was using Micron's trade secrets to jumpstart the process flow technology and get the UMC-Jinhua joint technology done faster, cheaper, and with fewer resources. Chen facilitated the access by permitting Ho and Lee to use USBs from their first days at UMC, and UMC perpetuated their employment and access even after discovering what Ho and Lee did with that USB access. Chen's knowledge, his planning, and his facilitation are all attributable to Jinhua.

D. The Joint Relationship Between UMC and Jinhua Underscores the Agency Relationship Between Jinhua and J.T. Ho, Stephen Chen, and Others

The Court need not reach the government's joint venture argument if it concludes that Ho and Chen are agents of Jinhua and Jinhua is guilty of Counts One, Two, and Seven based on their acts. If the Court needs to go further, however, the force of joint venture law as applied to this case is two-fold: first, it underscores that Ho and Chen were agents of Jinhua. Second, under it, Jinhua is responsible for the possession and use of Micron trade secrets by UMC for the admitted "internal UMC conspiracy," Dkt. 380, at 6, including Wang, who had no direct contract with Jinhua. Jinhua's objections to joint-venture liability are without merit.

1. Legal Standards Relevant to Joint Venture Liability

In a joint venture, the corporate venturers are partners and thus principals and agents of each other and liable for each other's acts and statements during the course of and in furtherance of the joint venture. *See* 46 AM. JUR. 2D JOINT VENTURES § 3, at 21-22 (2017) ("A joint venture is generally governed by the same rules as those governing partnership, because a joint venture is a form of partnership, or is essentially partnership for a limited purpose, or is a kind of partnership and there is generally no essential difference between a partnership and a joint venture."); W. PAGE KEETON, DAN B. DOBBS, ROBERT E. KEETON & DAVID G. OWEN, PROSSER AND KEETON ON THE LAW OF TORTS § 72, at 516-17 (5th ed. 1984) ("A '*joint enterprise*' is something like a partnership, for a more limited period of

time, and a more limited purpose. It is an undertaking to carry out a small number of acts or objectives, which is entered into by associates under such circumstances that all have an equal voice in directing the conduct of the enterprise. The law then considers that each is the agent or servant of the others, and that the act of any within the scope of the enterprise is to be charged vicariously against the rest."). Thus, as with traditional agents, "An act or omission of a partner within the scope of the partnership business is the act or omission of all partners." Ninth Circuit Model Civil Jury Instructions 4.17 (General Partnership — Act of Partner Is Act of All Partners).

2. Because the DRAM Research and Development was a Joint Venture Between UMC and Jinhua, Jinhua is Also Guilty Through the Acts and Knowledge of Kenny Wang and Neil Lee

The evidence at trial established that the DRAM development was a joint venture between UMC and Jinhua, as formally set out in the PCFA and the TCA, and as applied day-to-day between the two companies as they carried out the contractual obligations. It is not a stretch to conclude that UMC and Jinhua were in a joint venture, as the parties themselves referred to it as such. For example, a Jinhua employee called the project a joint venture when writing to Sandy Kuo to get information from her, requesting the "Whole JV's Business Plan." P1092.001. Moreover, outsiders, such as Brian Trafas at KLA-Tencor, also understood the DRAM project to be a joint venture. *See* Trafas Tr., Vol. 17, 3094-95.

Turning to the key contract themselves, the PCFA anticipates the TCA and calls it a joint venture agreement: "The expenses for the execution of this agreement and following its execution up to the execution of the joint venture agreement shall be the expenses for preparations." *See* 1023T ¶ 4.3. The scope of the joint relationship was set out in the TCA as being for a term of five years. *See* 1193T.0002. The TCA sets out joint ownership of the technology. *See id.* ¶¶ 2.4, 2.5. UMC and Jinhua plainly shared profits directly in Section 2.4 of the TCA, *see id.* (licensing of jointly developed and owned technology), and indirectly through Section 3.4 of the PCFA. *See* P1023T.0005 ("Profit-sharing and loss absorption"). Although Jinhua notes that the parties to the TCA and PCFA differ, Dkt. 449 at 44 n.13, the bottom line is that the PCFA gave UMC a share of Jinhua's profits.

Jinhua's argument that the TCA superseded the PCFA, Dkt. 449 at 44, ignores that the PCFA is an agreement among the Jinhua shareholders and contemplates and references the TCA, which is an agreement between the project company, Jinhua, and one of Jinhua's purported shareholders, UMC. *See*

P1023T ¶ 14.8 ("The parties agree that the Technical Cooperation Agreement executed based on this agreement is an integral part of this agreement."); *id.* at P1023T ¶ 2.6(b) (referring to the TCA), ¶ 2.6(d) (characterizing TCA as a "supplementary agreement"). The TCA's "entire agreement" clause did not extinguish the PCFA because the TCA does not cover all of "the matters" in the PCFA, P1193T ¶ 12.1, such as shareholdings, capital contributions, loss absorption, and other aspects of the shareholders' ownership of the project company, Jinhua.

Importantly, UMC and Jinhua *acted* jointly. On the operational side, Chen, Sandy Kuo, and Huang carried out day-to-day business operations, including talent recruitment, business information development for Jinhua, and briefings at Jinhua Board meetings on all relevant topics. Sandy Kuo and Chen even worked on the Jinhua logo, and sought input from UMC's Chairman on it. *See* P0816.0001. Huang, then a UMC employee, briefed the Jinhua Board of Directors on every topic at a March 2016 Jinhua Board Meeting. *See* P1036T. Chen stood up with Albert Wu at the CASPA event in Santa Clara, California, and talked about Jinhua. In fact, Chen worked to hire Vice President Wu, even while Chen was sitting at UMC. *See* P1384T.0001. Ultimately, Sandy Kuo, Chen, and Huang all moved over formally to Jinhua, but they were clearly working on behalf of Jinhua while working for UMC.

Jinhua contends that Chen's work for Jinhua was simply UMC fulfilling its obligations to provide Jinhua with "all necessary technical consulting and professional manpower," Dkt. 449 at 50, but this argument does not advance Jinhua's efforts to shield itself from its eventual President, Chen. Chen fulfilling his obligations under the contract itself shows that the parties intended to act jointly. Further, Chen was more than fulfilling contractual obligations, the evidence shows that he was working day-to-day to ensure that the research and development being done *at* UMC for UMC and Jinhua *jointly* was successful.

Jinhua's contention that Jinhua did not have "guilty knowledge" of its joint venture partner's (UMC's) crimes, Dkt. 449, at 42, belies the evidence admitted at trial. Foremost, the contention requires ignoring everything adduced at trial about what Ho and Chen and Lee knew about what they had done with Micron's trade secrets. Second, Jinhua knew through Chen that getting two nodes of DRAM technology for only $400 hundred million dollars in five years after failing to get a single node after spending hundreds of billions of dollars over decades was too good to be true. *See* Segal Tr., Vol. 16,

2905:11 – 2908:7 (reviewing PRC's history of seeking domestic semiconductor industry). Third, Jinhua was on notice that a crime was afoot after the February 2017 Taiwanese law enforcement searches, but Jinhua nonetheless took possession of the full DRAM process flow the following month, in March 2017, and paid for it in May 2017. *See* P1192; Daly Tr., Vol. 19, 3671:5 – 3672:11 (UMC invoiced $30 million for the manufacturing process on May 4, 2017, and Jinhua paid about $27 million); P1533 (table of TCA invoices and payments with dates).

The practical effect of this jointness is to broaden the scope beyond Ho and Chen to Wang and Lee, who also possessed and used Micron Trade Secrets. Ultimately, the Court will not need to find that there was a formal joint venture to convict Jinhua, but the joint relationship between the two companies serves to buttress the conclusion that Ho and Chen are agents of Jinhua and expands it to Wang who did not enter into a direct contract with Jinhua, as his co-conspirators, Ho, Lee, and Chen, did. At the Rule 29 motion stage, it adds to the inference that Jinhua is liable for the acts and knowledge of its agent by contract (Ho), and agent by appointment to its presidency (Chen).

E. Jinhua's Guilt on Count Seven Arises from its Agents' Crimes

Jinhua is guilty of the economic espionage offense charged through its agents' possession of trade secrets throughout the relevant period. The evidence admitted at trial proved that Ho continually possessed Micron Trade Secrets on Devices 12 and 14, including opening Micron Trade Secret files 17 times on Device 12 after July 1, 2016. *See* P0378; *see* Crain Tr., Vol. 9, 1608:4 – 1610:4. Ho possessed Devices 11 and 14 until February 2017. Throughout this time, and at all times, Ho worked for Chen. The technology that Chen and his team was developing to transfer to Jinhua—and did transfer to Jinhua—was derived from Micron Trade Secrets to the deep and pervasive extent that Dr. Dyer explained. *See* Dyer Demonstrative A (summarizing and illustrating testimony). Dr. Dyer's conclusion at a high level is that Ho and Lee started with Micron's process flow and only deviated from it to implement the 3x2 array in place of the original 2x3 array, but did so by using Micron's Trade Secret 6, 7 and 8 documents, which set out the 3x2 array. Indeed, Dr. Dyer's assessment was that UMC never achieved any real independence, with a near match to Micron 25nm and 1x nm technology through transfer to Jinhua in September 2018. *See* Dyer Tr., Vol. 16, 2970:13-25, 2990:8-14.

II. Jinhua Joined the Conspiracies to Commit Economic Espionage (Count One) and Commit Theft of Trade Secrets (Count Two) and is Guilty as a Late-Joining Co-Conspirator

Jinhua argues in its Rule 29 motion that the government failed to prove "a criminal conspiracy to which Jinhua was a party." Dkt. 449, at 35. Nothing could be further from the truth. Jinhua, as an entity, was an essential part to both conspiracies alleged in the Indictment. The very structure of the conspiracies required Jinhua. Without a massively well-funded company supported by the PRC, there would have been no conspiracies hatched to take Micron's DRAM trade secrets for use in creating DRAM in the PRC. Certainly Chen, Ho, Lee, and fellow conspirator Wang would not have left Micron for UMC, as UMC was not in the business of making DRAM and, because the memory chip industry was so cutthroat, UMC would not have launched one without Jinhua. Indeed, the evidence introduced at trial has made clear that Chen was hired by UMC to head the DRAM project.

Because Jinhua does not contest that the conspiracies existed, but only whether the evidence was sufficient to establish Jinhua's participation in it, the government responds only to that question. The answer is that Jinhua is a late-joining member of each conspiracy at least through Ho and/or Chen. Each brought their knowledge to Jinhua, and at least in Ho's case, Micron's trade secrets. It is settled law that a late joining co-conspirator is liable for the acts of the conspiracy before joining. And after joining Jinhua, both Ho and Chen continued to act in furtherance of the conspiracies.

A. The Legal Standards

1. General Criminal Liability in Conspiracies

The conspiracies that Jinhua joined are a conspiracy to commit economic espionage (Count One) and a conspiracy to steal trade secrets (Count Two). The government's proposed jury instructions set out the elements of each charge. *See* Dkt. 309 at 38 (economic espionage) and 44 (theft of trade secrets).

2. A Subsequently Joining Conspirator is Liable for the Acts And Statements of Its Coconspirators Before It Joined The Conspiracy

It is clear law in the Ninth Circuit that subsequently joining conspirators are substantively liable for the acts of coconspirators previously taken in the course of and furtherance of the conspiracy:

> Once it is found that the defendant was connected with the conspiracy, he is equally liable with those who originated and dominated the common scheme, though he joined it after its inception and his part was minor and subordinate. He is responsible not only for the acts of the conspirators in furtherance of the conspiracy following his joinder, but also for those that precede it. Moreover, he is liable for the acts of his co-conspirators though he was not aware of the performance of those acts, nor even of the existence of the actors.

Hernandez v. United States, 300 F.2d 114, 122 (9th Cir. 1962) (footnotes omitted); *see United States v. Grovo*, 826 F.3d 1207, 1215 (9th Cir. 2016) ("One may join a conspiracy already formed and in existence, and be bound by all that has gone on before in the conspiracy, even if unknown to him." (internal alteration and quotation marks omitted)); *United States v. Anderson*, 532 F.2d 1218, 1230 (9th Cir. 1976). This Circuit expanded on *Anderson* in 1993:

> [O]ne who joins an ongoing conspiracy is deemed to have adopted the prior acts and declarations of co-conspirators, made after the formation and in furtherance of the conspiracy. As long as it is shown that a party, having joined a conspiracy, is aware of the conspiracy's features and general aims, statements pertaining to the details of plans to further the conspiracy can be admitted against the party even if the party does not have specific knowledge of the acts spoken of.

United States v. Mkhsian, 5 F.3d 1306, 1312 (9th Cir. 1993) (citations omitted). The Supreme Court long ago adopted the same principle. *United States v. United States Gypsum Co.,* 333 U.S. 364, 393 (1948) ("With [a] conspiracy thus fully established, the declarations and acts of the various members, even though made or done prior to the adherence of some to the conspiracy become admissible against all as declarations or acts of co-conspirators in aid of the conspiracy."). It is followed by other Circuits as well. *United States v. Barksdale-Contreras*, 972 F.2d 111, 114 (5th Cir. 1992) ("[I]t is settled law, however, that one who joins an ongoing conspiracy is deemed to have adopted the prior acts and declarations of conspirators, made after the formation and in furtherance of the conspiracy." (citations omitted)); *United States v. Brown*, 943 F.2d 1246, 1255 (10th Cir. 1991) ("The prevailing view among the circuits is that previous statements made by co-conspirators are admissible against a defendant who subsequently joins the conspiracy… The fact that appellant may have joined the conspiracy after its inception does not make his co-conspirators' previous statements inadmissible.") (collecting cases); *United States v. Baines,* 812 F.2d 41, 42 (1st Cir. 1987) ("[A] conspiracy is like a train[;] when a party knowingly steps aboard he is part of the crew and accepts responsibility for the existing freight [it is already carrying.]").

B. Jinhua is a Late Joining Co-Conspirator to the Conspiracies

Jinhua's Rule 29 motion is silent about this unwavering authority. Yet, this well-established legal authority is the precise authority that gives rise to Jinhua's liability on the conspiracy charges. When Ho and Chen became agents of Jinhua, each brought their intent, knowledge, and actions to Jinhua, and at

least in Ho's case, Micron's trade secrets. After they joined Jinhua, the conspiracy, consisting at least of natural persons Chen, Ho, Lee, and Wang, and the corporation UMC, which is also liable for their knowledge and actions, continued in its possession and use of Micron trade secrets for the benefit of all the conspirators—including Jinhua. Accordingly, as of the effective date of Jinhua's Labor Contract with Ho, July 1, 2016, Jinhua joined the charged conspiracies through Ho. As of no later than December 2016, when Jinhua made Chen its President, Jinhua joined the charged conspiracies through Chen.

Instead of addressing the conspiracy law directly on point, in its Rule 29 motion, Jinhua attempts to evade guilt by retreating to what it contends is a principle of agency law. In particular, Jinhua contends that it is ignorant of knowledge acquired by its agents before they became its agents. *See* Dkt. 449, at 33-34. According to Jinhua, even if Ho, Lee, and Guo conspired to and did possess Micron's DRAM trade secrets, knowing that they had no authorization to possess them, and intended to use them to benefit the PRC and Jinhua with knowledge that doing so would injure their former employer Micron, and even if Ho, Lee, and Guo were all Jinhua agents bound by written labor contracts – even if all that is true – Jinhua nonetheless contends that those agents' "knowledge of the alleged conspiracy" is not attributable to Jinhua because it was not learned "through their Jinhua position." Dkt. 449, at 39.

Contrary to Jinhua's contention, an agent's knowledge is attributed to the principal whenever and however it was learned. That rule has been black-letter law for more than half a century. Section 276 of the *Restatement (Second) of Agency* provides:

> § 276. Time, Place or Manner of Acquisition of Agent's Knowledge
>
> Except for knowledge acquired confidentially, the time, place, or manner in which knowledge is acquired by a servant or other agent is immaterial in determining the liability of his principal because of it.

1 RESTATEMENT (SECOND) OF AGENCY § 276, at 602 (1958). As comment a to that Section of the *Restatement Second* explains, "Since the mind of the agent cannot be divided into compartments, the principal should be bound by whatever knowledge the agent has, irrespective of its source or time of acquisition, unless it is the kind of knowledge which the agent can properly disregard in this specific case because of having acquired it confidentially." *Id*. § 276 cmt. a, at 603. *See, e.g., Funk v. Tifft,* 515 F.2d 23, 26 (9th Cir. 1975) ("as President … and one of its three stockholders at the time at which the corporation acquired the land, Tifft was an agent of the corporation and the knowledge of an agent is

attributable to the principal regardless of when it is acquired."); *Shenandoah Valley Poultry Co. v. Armour & Co.*, 854 F.2d 1013, 1018 (7th Cir. 1988) ("It also is of no consequence that [the agent] may have obtained the knowledge of the … contract as early as four months before he became an employee of Shenandoah, while he was still employed by Armour.").

The *Restatement (Third) of Agency* adopts the compartmentalization rationale of the *Restatement (Second),* and imputes facts to the principal,

> regardless of how the agent came to know the fact or to have reason to know it. When an agent is aware of a fact at the time of taking authorized action on behalf of a principal and the fact is material to the agent's duties to the principal, notice of the fact is imputed to the principal although the agent learned the fact *prior to the agent's relationship with the principal*, whether through formal education, prior work, or otherwise. Likewise, notice is imputed to the principal of material facts that an agent learns casually or through experience in the agent's life separate from work.

1 RESTATEMENT (THIRD) OF AGENCY § 5.03 cmt. e, at 374-75 (2006) (emphasis added).

Attribution of an agent's pre-existing UMC knowledge to Jinhua upon commencement of the Jinhua agency is fatal with respect to Chen. Although Jinhua contends that Ho, Lee, and Guo were never its agents, Jinhua admits that Chen was its agent – Jinhua only disputes when. But delaying the date on which Chen became Jinhua's President does not help Jinhua because whenever Chen became Jinhua's President, he brought with him his knowledge of the conspiracies to possess Micron's DRAM trade secrets, knowing that he had no authorization to possess them, and intending to use them to benefit the PRC and Jinhua and either knowing or intending to injure his former employer. As explained by *Fletcher Cyclopedia of the Law of Corporations*:

> As a general rule, any knowledge possessed by an officer of a corporation as to matters within the scope of his or her authority, while the officer occupies such relation, is notice to the corporation, whenever it may have been acquired. So, knowledge acquired by the general agent of an insurance company while writing insurance for the same insured, but while acting for other insurance companies, was knowledge of the first insurer.
>
> The existence of knowledge of an agent, when acting for the principal, is notice to the principal, however that knowledge may have been acquired.

3 WILLIAM MEADE FLETCHER, FLETCHER CYCLOPEDIA OF THE LAW OF CORPORATIONS § 799, at 55 (2018 rev. ed) (footnotes omitted); *see id.* § 799, at 56 ("The knowledge that a managing official of a corporation gains as to certain facts and conditions, while a like official of the predecessor of the corporation in question, is also imputable to the successor. The knowledge gained by an official of a

corporation while acting in a like capacity in a corporation organized and controlled by the first company is imputable to it.").

The Reporter of the *Restatement (Third)* was aware of cases like the ones Jinhua cites that state affirmatively that knowledge acquired in the course of and during an agency relationship is attributable to the principal. That affirmative statement is a correct statement of agency law. But Jinhua wants to read that statement to be the only circumstances in which knowledge is attributable to the principal, to the exclusion of knowledge acquired before the agency commenced. Jinhua's cases do not support that conclusion and it does not follow. As the *Restatement (Third)* explains:

> An agent brings the totality of relevant information that the agent then knows to the relationship with a particular principal. This often works to the benefit of a principal who retains an agent. Most cases that consider the question adopt the rule as stated. Many cases state in passing that an agent's knowledge is imputed to the principal if the agent acquired it "within the course" of the agency relationship but do not consider whether the circumstances under which the agent acquired knowledge of a fact should matter. The better rule is the broader rule that charges a principal with the totality of an agent's knowledge of material facts and disregards the provenance of how the agent learned them.

1 RESTATEMENT (THIRD) OF AGENCY § 5.03 cmt. e, at 375. Tellingly, in none of the cases that Jinhua cites does a court refuse to attribute an agent's knowledge to his principal because it was acquired before the agency formally commenced. *See* Dkt. 449, at 33:25-34:22. None of the cases support the proposition for which Jinhua cites them.

Finally, in addition to ignoring the law of late-joining co-conspirators, Jinhua seeks to import a strange concept into contract law: Jinhua suggests a criminal agreement must be made in writing. Jinhua makes this assertion repeatedly: "there is no evidence that the labor contracts were actually an agreement by Jinhua to have Messrs. Ho, Lee and Guo commit economic espionage and theft of trade secrets in their concurrent UMC roles," Dkt. 449 at 38:23-25, and "Neither Jinhua nor Mr. Chen, therefore, knew about the alleged trade secrets when they reached an agreement." *Id.* at 39:17-19. It would be surprising indeed if Jinhua agreed in writing to have its agents engage in trade secret theft and economic espionage. In truth and in fact, although the agreements to engage in criminal conduct were not in writing, the evidence at trial established that Jinhua joined the conspiracies through the persons that it engaged – formally – to be its agents. This law is not novel; it is precisely what the law of agency and corporate liability has held consistently since 1909. Put simply, the evidence established that Jinhua

joined the conspiracy through at least Ho and Chen, and Jinhua is a guilty late-joining co-conspirator.

III. Jinhua's Extraterritoriality Argument is Untimely Under Criminal Rule 12(b)(3) and, in Any Event, Extraterritoriality Did Not Need to be Pleaded in the Indictment or Proved Beyond a Reasonable Doubt Because It is Not an Offense Element

Congress declared the Legislature's intention to apply the Economic Espionage Act of 1996 outside the territory of the United States in 18 U.S.C. § 1837. In its Rule 29 Motion, Jinhua contends that Congress's extraterritoriality statement to the Judiciary is an element of the offenses of economic espionage in 18 U.S.C. § 1831 and trade-secret theft in 18 U.S.C. § 1832. *See* Dkt. 449, at 57-63.

Because Jinhua failed to challenge the indictment for "failure to state an offense" before trial, its extraterritoriality objection to the indictment is untimely. Fed. R. Crim P. 12(b)(3)(B)(v). In any event, if the Court were to reach the merits of Jinhua's argument, extraterritoriality is not an offense element, and therefore the Indictment should not be dismissed nor a judgment of acquittal entered.

A. Jinhua was Required to Challenge Extraterritoriality Before Trial Because Omission of an Element Would Fail to State an Offense

Federal Rule of Criminal Procedure 12(b)(3)(B) requires defendants to raise defects "in the indictment" before trial. *See United States v. Ceja*, 23 F.4th 1218, 1226 (9th Cir. 2022) (alleged duplicity). The "failure to state an offense" is one such defect in the indictment that must be raised before trial. Fed. R. Crim. P. 12(b)(3)(B)(v); *see United States v. Wheeler*, 857 F.3d 742, 744 (7th Cir. 2017) (Easterbook, J.) (untimely motion for failure to state an offense). As a result, a post-trial challenge "'suggests a purely tactical motivation' and is needlessly wasteful because pleading defects can usually be readily cured through a superseding indictment before Trial." *United States v. Johnson*, Case No. CR 14–00208–BRO, 2015 WL 13687731, *4-5 (C.D. Cal. Dec. 15, 2015) (quoting *United States v. Lo*, 231 F.3d 471, 481 (9th Cir. 2000)).

Jinhua did not move to dismiss the Indictment for omitting extraterritoriality allegations before trial nor did Jinhua argue that extraterritoriality is an element of the crimes charged in its own proposed jury instructions. *See* Dkt. 309, at 41-43 (Count One); *id*. at 48-51 (Count Two); Dkt. 308, at 44 (Count Seven). The extraterritoriality "defect" in the Indictment was "reasonably available" to Jinhua before trial and could have been "determined without a trial on the merits." Fed. R. Crim. P. 12(b)(3).

In *United States v. Vasquez*, 899 F.3d 363, 371-72 (5th Cir. 2018), the Fifth Circuit held that, in a

case involving 21 U.S.C. § 848(E)(1)(A) (proscribing killing in connection with a predicate drug offense), an extraterritoriality challenge must be made before trial and that a post-verdict motion for acquittal on that ground was untimely. The Fifth Circuit explained:

> Extraterritoriality "is a question on the merits rather than a question of a tribunal's power to hear the case." In other words, an argument that a statute does not apply extraterritorially is not an argument that the court lacks jurisdiction. It thus does not fall into the category of motions that "may be made at any time while the case is pending." … Vasquez therefore should have raised it in a pretrial motion to dismiss the indictment, not in a post-verdict motion for a judgment of acquittal.

Vasquez, 899 F.3d at 371-72 (citations omitted). In this District, Judge Koh followed the Fifth Circuit's decision in Vasquez and noted that two Ninth Circuit opinions "at least implied" that the holding that extraterritoriality is a merits issue, not a jurisdictional issue "extends to criminal cases." *United States v. Wolfenbarger*, Case No. 16-CR-00519 LHK, 2020 WL 2614958, at *3 (N.D. Cal. May 22, 2020) (citing *United States v. Xu*, 706 F.3d 965, 977 (9th Cir. 2013), *abrogated on other grounds by RJR Nabisco, Inc. v. European Community*, 136. S. Ct. 2090 (2016), and *United States v. Hsiung*, 778 F.3d 738, 752 (9th Cir. 2015)).

Because Jinhua's extraterritoriality objection is untimely, the Court may consider it only "if the party shows good cause." Fed. R. Crim. P. 12(c)(3). In its Rule 29 motion, however, Jinhua does not discuss the (un)timeliness of its extraterritoriality objection or why good cause exists to consider the objection six weeks into trial. The extraterritorial nature of this criminal proceeding was no surprise to Jinhua and Jinhua cannot possibly show good cause for its failure to present this issue to the Court before trial. As a consequence, the Court should hold that Jinhua's extraterritoriality challenge to the Indictment is forfeit.

B. In Any Event, Extraterritoriality is Not an Offense Element and Thus Did Not Need to be Pleaded in the Indictment or Proved Beyond a Reasonable Doubt

Jinhua's argument rests on the premise that extraterritoriality is an offense element. From the premise, Jinhua reasons that extraterritoriality must be alleged in the indictment and proved beyond a reasonable doubt. *See* Dkt. 449, at 57. Jinhua's premise, however, is false. The presumption against extraterritorial application of a statute is a canon of construction, not an offense element.

For any crime, the elements are "every fact necessary to constitute the crime with which [the defendant] is charged." *In re Winship*, 397 U.S. 358, 364 (1970). Those elements are generally defined

by Congress or the State Legislature. *See Patterson v. New York*, 432 U.S. 197, 211 & n.12 (1977) ("The applicability of the reasonable-doubt standard, however, has always been dependent on how a State defines the offense that is charged in any given case…."); *see also McMillan v. Pennsylvania*, 477 U.S. 79, 86 (1986) ("*Patterson* teaches that we should hesitate to conclude that due process bars the State from pursuing its chosen course in the area of defining crimes and prescribing penalties.").

Congress did not include extraterritoriality in the offense elements of Sections 1831 or 1832. Consistent with the statute, the Ninth Circuit's Model Criminal Jury Instructions state the elements of Sections 1831 and 1832 but omit any extraterritoriality element. *See* Ninth Circuit Model Criminal Jury Instruction Nos. 8.141A & 8.141B (2010 ed. updated Dec. 2020). Instead, extraterritoriality appears in an entirely separate section that defines no offense conduct and instead speaks to Congress's intention that the Economic Espionage Act of 1996 "appl[y] to conduct occurring outside the United States." 18 U.S.C. § 1837.[9]

Jinhua makes almost no effort to explain or support its assertion that extraterritoriality is an offense element. In a single conclusory sentence, Jinhua asserts that "Section 1837(2), therefore, is an element of the offense charged against Jinhua." Dkt. 449, at 57:17-20. Jinhua then cites three cases, none of which discusses 18 U.S.C. § 1837, and none of which holds that extraterritoriality is an offense element. Instead, Jinhua's three cases are entirely consistent with *Winship*, *Patterson*, and *McMillan*, because all three derive offense elements from the Legislature's definition of the crime.

First, in the statute in *United States v. Gipe*, 672 F.2d 777, 778 (9th Cir. 1982), possession in Indian country was "one of the facts necessary to constitute the crime" and thus needed to be proved beyond a reasonable doubt. Unlike the crimes charged here, Congress set out that specific limitation in

[9] The interstate-or-foreign commerce element in Section 1832 shows that Congress knew how to make extraterritoriality an offense element if it had intended to do so. Section 1832(a) defines trade-secret theft to include the element that the trade secret be "related to a product or service used in or intended for use in interstate or foreign commerce," presumably because trade-secret theft rested on Congress's Commerce Clause power. Section 1831 on economic espionage includes no such element. The Ninth Circuit's Model Criminal Jury Instructions likewise include the interstate-or-foreign-commerce element in Section 1832 but not Section 1831. *See* Ninth Circuit Model Criminal Jury Instruction Nos. 8.141A & 8.141B. If Congress had intended to include extraterritoriality as an offense element, it needed only to include that element in Sections 1831 and 1832. It did not. *Expressio unius est exclusio alterius*. *See, e.g., Leatherman v. Tarrant County Narcotics Intelligence & Coordination Unit*, 507 U.S. 163, 168 (1993); *Johnson v. Home State Bank*, 501 U.S. 78, 87 (1991).

the "whoever" clause of 18 U.S.C. § 1156: "Whoever, except for scientific, sacramental, medicinal or mechanical purposes, possesses intoxicating liquors *in the Indian country* or where the introduction is prohibited by treaty or an Act of Congress, shall [be punished]." (emphasis added); *see* 672 F.2d at 779. *Second*, in *United States v. Read*, 918 F.3d 712, 717 (9th Cir. 2019), the court found similarly because defendant "Read was charged under 18 U.S.C. § 113(a), which prohibits an assault 'within the special maritime and territorial jurisdiction of the United States.'" *Third*, *Rehaif v. United States*, 139 S. Ct. 2191 (2019), echoes the holdings in *Patterson* and *McMillan* and emphasizes Congress' intent. By defining the offense elements as those following the "whoever" clause, *Rehaif* supports the government's position that the elements are in Sections 1831 and 1832, which state that "whoever" does the acts in those Sections commits economic espionage and trade-secret theft respectively.

The "offense elements" cases cited by Jinhua reveal why the "whoever" clause defines the offense elements and the separate extraterritoriality section does not – because the "whoever" clause speaks to prospective lawbreakers while the extraterritoriality section speaks to the judiciary. In *Apprendi v. New Jersey*, 530 U.S. 466, 476 (2000), the Court quoted Oliver Wendell Holmes, Jr.: "The law threatens certain pains if you do certain things, intending thereby to give you a new motive for not doing them. If you persist in doing them, it has to inflict the pains in order that its threats may continue to be believed." O.W. HOLMES, JR., THE COMMON LAW 40 (M. Howe ed. 1963). The federal elements cases – *Gipe*, *Read*, and *Rehaif* – all begin with the noun "whoever." They address potential lawbreakers and the statutory verbs describe the offenses that Congress proscribed. Like the federal statutes in those cases, 18 U.S.C. § 1831 and § 1832 begin with "whoever," are addressed to potential lawbreakers, and the 28 verbs and other text that follows define the elements of the two crimes.

By contrast, in 18 U.S.C. § 1837, Congress speaks not to potential lawbreakers but to the Judicial Branch: "This chapter [Chapter 90 – Protection of Trade Secrets, 18 U.S.C. §§ 1831-1839] also applies to conduct occurring outside the United States if (1) the offender is a natural person who is a citizen or permanent resident alien of the United States, or an organization organized under the laws of the United States or a State or political subdivision thereof; or (2) an act in furtherance of the offense was committed in the United States." "Congress has the authority to enforce its laws beyond the territorial boundaries of the United States." *EEOC v. Arabian Am. Oil Co.,* 499 U.S. 244, 248 (1991), *superseded*

by statute, Civil Rights Act of 1991, Pub. L. 102-166, § 109, 105 Stat. 1071, 1077-78 (1991) (codified at 42 U.S.C. §§ 2000, 2000e-1, 12111, 12112). But the Judicial Branch understands that the Political Branches "ordinarily legislate[] with respect to domestic, not foreign matters." *Morrison v. National Australia Bank Ltd.,* 561 U.S. 247, 255 (2010), *superseded by statute*, Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 929P(b), 124 Stat. 1376, 1864-65 (2010) (codified at 15 U.S.C. §§ 77v,78aa, 80b-14). Requiring a clear indication of extraterritorial application "helps ensure that the Judiciary does not erroneously adopt an interpretation of U.S. law that carries foreign policy consequences not clearly intended by the political branches." *Kiobel v. Royal Dutch Petroleum Co.,* 569 U.S. 108, 116 (2013); *see RJR Nabisco, Inc. v. European Community*, 136. S. Ct. 2090, 2102 (2016) ("a clear indication of extraterritorial effect [overcomes the presumption against extraterritoriality], an express statement of extraterritoriality is not essential").

Tellingly, Jinhua cites no case in which a court has found an indication or statement of extraterritoriality to be an offense element.[10] In principle, a contextual indication or clear statement by Congress that it intended a statute to apply outside United States territory might say just that – and not depend on any facts or circumstances at all that would be subject to allegation in an indictment or proof. *See, e.g.*, Maritime Drug Law Enforcement Act, 46 U.S.C. app. § 1903(h) (1994 & Supp. V 2000) ("This section is intended to reach acts of possession, manufacture, or distribution committed outside the territorial jurisdiction of the United States."). Even if Congress conditions extraterritorial application of a statute on facts and circumstances, those facts and circumstances would, like venue, at most be proved by a preponderance of the evidence. Not every fact essential to a criminal conviction constitutes an element of the offense. The effective date of an Act of Congress, the statute of limitations, affirmative

[10] The three district court Section 1837 cases that Jinhua cites are all civil trade secret cases. None holds that the Section 1837 is an element of a criminal offense. *Beijing Neu Cloud Oriental Sys. Tech. Co., Ltd. v. International Bus. Mach. Corp.*, 21 Civ. 7589 (AKH), 2022 WL 889145, at *4-5 (S.D.N.Y. Mar. 25, 2022), dismissed a civil complaint that failed to allege that "a discrete act in furtherance of the misappropriation took place in the United States," but granted leave to replead and did not hold that acts in furtherance in the United States constituted an element. *Luminati Networks Ltd. v. BI Science Inc.*, Civil Action No. 2:18-CV-00483-JRG, 2019 WL 2084426, *11 (E.D. Tex. May 13, 2019), held that alleged sales or acts in furtherance of sales in the United States sufficed to state a claim. And *Vendavo, Inc. v. Price F(X) AG*, Case No. 17-cv-06930 RS, 2018 WL 1456697, *4 (N.D. Cal. Mar. 23, 2018), states that "territorial and temporal limits" are "foundational to the existence of a viable claim" in a civil trade secrets case, and dismissed a complaint with leave to replead, but did not hold that those "facts" are elements.

defenses, and venue are all facts critical to conviction, but none of them are elements of the offense that must be alleged in an indictment and proved beyond a reasonable doubt.

Because the grounds for extraterritorial application of the Economic Espionage Act of 1996 are not offense elements, they need not be alleged in the indictment and they did not need to be proved beyond a reasonable doubt. To the extent that they needed to be proved by a preponderance of the evidence, like venue, the testimony of FBI Special Agent Leticia Wu and KLA-Tencor senior executive Brian Trafas was sufficient for extraterritoriality and venue, as described in the next section.

C. Jinhua's October 2016 Efforts to Procure Skilled Workers and Equipment in this District Constituted Acts in Furtherance of Jinhua's Offenses in the United States

If extraterritoriality was an element of a charged offense, the evidence at trial proved it beyond a reasonable doubt. Procuring skilled workers and equipment in California are obviously "act[s] in furtherance" of conspiracies to make DRAM in the PRC based on technology stolen from Micron in Taiwan. "Furtherance" is "[t]he act or process or facilitating the progress of something or of making it more likely to occur; promotion or advancement." BLACK'S LAW DICTIONARY 790 (10th ed. 2014). The offenses alleged in the indictment are conspiracies and theft of "DRAM trade secrets belonging to Micron and convey[ing] information containing those trade secrets to a company controlled by the PRC government without authorization from Micron." Dkt. 1 ¶ 3 (Indictment). Consistent with the introductory allegations, recruiting experienced employees and visiting semiconductor equipment manufacturers are included as both the manner and means of the conspiracies, *see id*. ¶ 31, and overt acts in furtherance of the conspiracies. *See id*. ¶¶ 46-47. Jinhua satisfied key elements of Counts One, Two, and Seven by conspiring to and possessing Micron's trade secrets without authorization. But Counts One and Seven also required (and the Indictment alleged) that Jinhua conspired and possessed without authorization "knowing that the offenses would benefit a foreign government, namely the PRC, and a foreign instrumentality, namely Jinhua." Indictment ¶ 17(c); *see id*. ¶ 63. Procuring skilled employees and equipment to make DRAM in the PRC would – in normal parlance – promote, advance, and further offenses benefitting the PRC and Jinhua and provide evidence Jinhua knew the possession would benefit it and the PRC. So, too, would employees and equipment further the injury of Micron, the trade secret owner, and Jinhua's knowledge of that prospective injury. *See* Indictment ¶ 51(c).

If the "in furtherance" debate in this criminal case seems familiar to the Court, it may be because the Court has already found that recruiting skilled workers and buying semiconductor equipment were acts in this District in furtherance of the offenses when it denied Jinhua's motion to dismiss for lack of personal jurisdiction in the related civil case. *See Micron Technology, Inc. v. United Microelectronics Corporation and Fujian Jinhua Integrated Circuit Co., Ltd.*, Case No. 17-cv-06932 MMC, 2019 WL 1959487, *2-8 (N.D. Cal. May 2, 2019). In the civil case, Jinhua (and UMC) moved to dismiss Micron's first amended complaint for lack of personal jurisdiction. *See id*. at *2. Micron contended that Jinhua's efforts to recruit employees and buy equipment in this District provided sufficient contacts to hale the PRC into this Court. *See id*. at *6. The Court found personal jurisdiction in a detailed opinion that discusses the same recruiting and procurement facts that the government proved at trial through the testimony of Agent Wu and Executive Trafas and rejected similar arguments made by Jinhua:

> Jinhua argues its participation in the above-referenced job fair and its having met with and ordered equipment from vendors do not constitute purposeful availment….
>
> As set forth above, the activities Micron alleges occurred in this district are not themselves alleged to be acts of misappropriation, but, rather, acts in furtherance of misappropriation occurring outside the United States, namely, Jinhua's development and manufacture of products incorporating Micron's trade secrets….
>
> Micron's allegations are sufficient to support a finding that Jinhua knew its activities in the United States were likely to cause harm to Micron in the United States…. Accordingly, … the Court finds Micron has made a prima facie showing that Jinhua is subject to personal jurisdiction as to Micron's claims based on activities outside the United States to develop and manufacture products containing Micron's trade secrets.

Id. at *6 (citations omitted).

Jinhua concedes that "[t]he government's evidence at trial established two events occurred in the United States: the CASPA job fair and the KLA meeting, both in October 2016." Dkt. 449, at 60:23-25. In addition, Jinhua insists that those acts are *Jinhua's* acts. According to Jinhua, the October 2016 acts were "Jinhua's attempt to hire employees at CASPA and purchase tools from KLA." Dkt. 449, at 62:2-3; *see* Dkt. 449, at 61 n.21 ("But while KLA and Mr. Trafas understandably wanted to sell tools to both UMC and Jinhua, the meeting that occurred in the United States was only about the opportunity to sell tools to Jinhua."). Thus, the only question that remains is why procuring skilled workers and equipment in California would not further conspiracies to make DRAM in the PRC based on technology stolen from Micron in Taiwan and the substantive offense of economic espionage?

In answer to that question, Jinhua contends that the trade-secret theft was complete at UMC and Jinhua was thereafter legally permitted to use Micron's stolen trade secrets to make DRAM in the PRC: "Indeed, the charged offenses were to be completed by the time the tools or employees became relevant . . . Therefore, Jinhua's attempt to hire employees at CASPA and purchase tools from KLA were, at most, merely acts 'meant to allow [Jinhua] to enjoy the fruits of [its] crime[s]' . . . ." Dkt. 449, at 61:19-62:4 (the bracketed additions are Jinhua's); *see* Dkt. 449, at 60:25-61:2 ("both events were in furtherance of Jinhua's business activities after the completion of the charged offenses – not the allegedly unlawful conduct occurring at UMC."). There are two fundamental flaws in Jinhua's argument: *first*, the offenses were not complete at UMC and, *second*, Jinhua is not legally entitled to use Micron's trade secrets without authorization. The conspiracies in Counts One and Two were ongoing in October 2016 and acts such as procuring skilled employees and equipment furthered those conspiracies by putting Jinhua in a position to make DRAM in the PRC using stolen Micron technology. *See Smith v. United States*, 568 U.S. 106, 111 (2013) ("Since conspiracy is a continuing offense, a defendant who has joined a conspiracy continues to violate the law 'through every moment of [the conspiracy's] existence,' and he becomes responsible for the acts of his co-conspirators in pursuit of their common plot." (citations omitted)). Economic espionage, in the form of the unauthorized possession of trade secrets, is also a continuing offense and, by October 2016, the TCA was in full swing with both UMC and Jinhua developing DRAM technology. "Possessory offenses have long been described as "continuing offenses" that are not complete upon receipt of the prohibited item." *Krstic*, 558 F.3d at 1017-18 (holding possession of authentic immigration document obtained by means of a false statement is a continuing offense); *see United States v. Kayfez,* 957 F.2d 677, 678 (9th Cir. 1992) (per curiam) (finding possession of counterfeit notes is a continuing offense); *Eichelberger v. United States,* 252 F.2d 184, 184-85 (9th Cir. 1958) (holding possession of firearms is a continuing offense).

In any event, omission of extraterritoriality from the Indictment was harmless beyond a reasonable doubt, because the facts of Jinhua's recruiting and equipment procurement are undisputed and the inference those facts furthered Jinhua's offenses is inescapable. Although the Ninth Circuit considers element omissions to be structural errors (*see United States v. Omer*, 395 F.3d 1087, 1088-89 (9th Cir. 2005), *rehearing denied*, 429 F.3d 835 (9th Cir.2005) (cited by Jinhua, Dkt. 449, at 59:17)), six

Circuit Judges voted to reconsider that position and eight circuits hold that element omissions are subject to harmless-error analysis. *See* Petition for a Writ of Certiorari in *United States v. Resendiz-Ponce*, No. 05-998, 2006 WL 304682, at *8-9 (Feb. 8, 2006) (citing decisions of the First, Fourth, Fifth, Sixth, Seventh, Eighth, and Tenth Circuits); *United States v. Stevenson*, 832 F.3d 412, 426 (3d Cir. 2016) (abrogating *United States v. Spinner*, 180 F.3d 514, 515-16 (3d Cir. 1999), on which Jinhua relies at Dkt. 449, at 59 n.17). This Court must follow *Omer*, but it can hold that, if extraterritoriality were subject to harmless-error analysis, its omission from the Indictment here is harmless beyond a reasonable doubt.

D. Jinhua's Contacts with this District and the Effects of Its Actions in the United States Make It Fundamentally Fair and Consistent with Due Process for Jinhua to be Tried in the United States

As a last resort, Jinhua contends that "[e]ven if § 1837(2) were both sufficiently alleged and proved at trial, extraterritorial application of §§ 1831 and 1832 to Jinhua would violate constitutional due process" under the Fifth Amendment to the United States Constitution. Dkt. 449, at 62:15-16. Contrary to Jinhua's contention, the nexus required between Jinhua and the United States to pass constitutional muster is minimal and the effects of Jinhua's actions on the United States and its contacts with the forum make it fundamentally fair for Jinhua to answer for the indicted offenses in this country.

Circuit law in maritime drug seizure cases holds that extraterritorial application of federal criminal statutes requires "a sufficient nexus between the defendant and the United States so that such application would not be arbitrary or fundamentally unfair." *United States v. Davis*, 905 F.2d 245, 248-49 (9th Cir. 1990) (citation and footnote omitted). Citing *United States v. Klimavicius-Viloria*, 144 F.3d 1249, 1257 (9th Cir. 1998), another maritime drug seizure, Jinhua suggests that the measure of a sufficient nexus is the same as the minimum contacts required to assert personal jurisdiction over a defendant in a civil case. But *Klimavicius-Viloria* explained only that "[t]he nexus requirement serves the same *purpose* as the 'minimum contacts' test in personal jurisdiction" and "should be decided by the court prior to trial." *Id*. (quoting *World-Wide Volkswagen Corp. v. Woodson*, 444 U.S. 286, 297 (1980) (emphasis added)). *Klimavicius-Viloria* did not hold that the fundamental-fairness test in criminal cases is the same as the minimum-contacts test in civil cases. To the contrary, in answer to the question "Was There A Sufficient Nexus?," the Ninth Circuit held that a sufficient nexus existed if the acts would

"caus[e] criminal acts within the United States" or "was likely to have effects in the United States." *Id.* (internal quotations and citations omitted). Those two effects are examples of the protective principle. *See United States v. Peterson*, 812 F.2d 486, 493-94 (9th Cir. 1987) (Kennedy, J.). "International law principles [such as the protective principle] may be useful as a rough guide of whether a sufficient nexus exists between the defendant and the United States so that application of the statute in question would not violate due process" so long as one does not "lose sight of the ultimate question: would application of the statute to the defendant be arbitrary or fundamentally unfair?" *Davis*, 905 F.2d at 249 n.2.

Jinhua's contacts with California and the effects of its actions in the United States make it rational and fundamentally fair for Jinhua to be tried for its offenses in the United States and this District. The *Restatement (Third) of the Foreign Relations Law of the United States* explains in pertinent part that "[a] state may … punish non-compliance with its law or regulations, provided it has jurisdiction to prescribe in accordance with §§ 402 and 403." 1 RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 431(1), at 321 (1987). In turn, Restatement Section 402 provides, in the part relevant to this case, that "a state has jurisdiction to prescribe law with respect to:

> (1) (a) conduct that, wholly or in substantial part, takes place within its territory; …
>
> (c) conduct outside its territory that has or is intended to have substantial effect within its territory;… and
>
> (3) certain conduct outside its territory by persons not its nationals that is directed against the security of the state or against a limited class of other state interests.

Id. § 402, at 237-38. The evidence of recruitment and equipment purchases in the District that supports extraterritoriality and venue also supports the constitutional exercise of this Court's power to try Jinhua for the indicted offenses. The Due Process test is the easiest of the three tests to satisfy because any conduct in the United States need not be a crime or in furtherance of a crime, conduct may be entirely outside the United States and merely have a "substantial effect" within the United States, and even an effect is unnecessary if the national security of the United States is at issue. As the House Committee on the Judiciary explained in the introduction to the bill that became the Economic Espionage Act of 1996, trade-secret theft threatens the national security:

> With this legislation, Congress will extend vital federal protection to another form of propriety economic information – trade secrets. There can be no question that the development of proprietary economic information an integral part of America's economic well-being. Moreover, the nation's economic interests are a part of its national security interest. Thus, threats to the nation's economic interest are threats to the nation's vital security interests.

H.R. REP. NO. 788, 104th Cong., 2d Sess. 4 (Sep. 16, 1996). Jinhua's economic espionage and theft of Micron's trade secrets not only threatened America's national security indirectly by jeopardizing the survival of its last DRAM maker, but it also threatened America's national security directly by planning to use American DRAM technology in PRC military. *See* P0709T.0009 (Oct. 13, 2015 DRAM business plan listing target markets as "national security" and specifically "Military projects").

Lastly, even if application of criminal law rested on the same minimum contacts used for personal jurisdiction in a civil case, this Court held that Jinhua has sufficient contacts and denied Jinhua's motion to dismiss.

CONCLUSION

For the reasons outlined above, the evidence—and reasonable inferences to be drawn from that evidence—was sufficient to establish that Jinhua is guilty of the two conspiracy counts as a late-joining co-conspirator which joined the conspiracy through its agents Ho and Chen, and for receipt, possession and purchase of Micron's stolen trade secrets also through its agents Ho and Chen. As a result, the United States respectfully requests that the Court deny the defendant's motion for judgment of acquittal.

Dated: May 13, 2022

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